COMPUTERWORLD

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Cobol-68 to Be Printed in Canada Before U.S.

By a CW Staff Writer

OTTAWA – Cobol-68, the latest step in the development of Cobol, is being printed by the Canadian government ahead of its U.S. printing.

The Canadian manual, the first edition of which was due from the printers April 15, will cost $1.75 in Canadian currency and will include an annual updating service. Updating facilities, not now provided by the U.S. government, are expected to be a valuable aid.

Cobol-68, approved by the Conference on Data Systems Languages (Codasyl) late last year, differs from the USA Standard Institute's Standard Cobol because it includes language developments which have taken place since 1965. The USASI Cobol specifications were frozen in 1965 and do not include later developments.

Improvements

The main improvements include provisions for inter-program communications and for writing a lineage clause to create automatic end-of-page operations. At the same time, the constants section, previously included in the language, has been eliminated.

Codasyl is continuing its updating of Cobol. The report writer, communications, and data base task groups are approaching the completion of their current work. The data base group is looking at the possible provision of a common data base which could be accessed equally by Fortran, PL/1, Algol, and Cobol programs.

Standards Work Delayed

During the 1966-68 period, Codasyl did not put much work into developing the language because of the constant interchange between it and the USASI Cobol Committee on the matter of clearing up, as far as possible, the known ambiguities in the language.

The delay in printing the Cobol-68 manual in the U.S. involves a delay in obtaining a foreword by an appropriate government agency and not any problem with the language.

The formal publication title of the Canadian manual is *Codasyl Cobol The Journal of Development 1968*, reference number 110-GP-1. Copies will be available from A.G. Dunn, Specifications and Standards Branch, Department of Supply and Services, 88 Metcalfe St., Ottawa, Ontario, Canada.

Honeywell's new 3200 computer system.

Honeywell 3200 Mixture Of the 4200 and the 110

By A.B. Williams
CW Staff Writer

WELLESLEY HILLS, Mass. – The 3200 computer system announced last week is Honeywell's latest member of the 200 series. Logically, it is a reduced 4200. In its use of monolithic integrated circuitry, it is a speeded-up version of the company's smallest machine, the 110.

The company expects that users of smaller 200 series systems will be able to use most of their current software on the newly announced processor without extensive rewrite.

The $12,000 to $25,000 monthly rental range for the 3200 puts it in competition with IBM's 360/50 and Burroughs' 3500.

The new processor is designed to run under Honeywell's Mod 4 Operating System. The company expects to demonstrate Mod 4 on a 4200 processor at the Spring Joint Computer Conference next month.

The 3200 cycles two 6-bit characters in one microsecond, the company said. It has three input/output sectors, two of which are buffered. Sixteen I/O channels support transfers of 167,000 and 83,000 characters per second and can be interlocked to handle high-speed devices. The system has a gross transfer capacity of 1.5 million characters per second, within which limit 16 channels can transfer information simultaneously with processing.

128K to 512K Memory

Main memory is available in sizes beginning at 128K, in increments of 64K to 512K. The control memory has 64 registers which can be accessed in 125 nanoseconds. Under multipro-

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U.S. Court Awards User $480,811 In Damages Against IBM's SBC

MINNEAPOLIS, Minn. – The level of dust on the warehouse shelves gave as good management information as did an own-$300,000 inventory control system from IBM's Service Bureau Corp., Judge Miles W. Lord said as he awarded $480,811 net damages to the automobile wholesaler who had sued SBC for fraud and misrepresentation.

The judge pointed out that the businessman is at the complete mercy of an entirely new technology. "His whole business was wrapped around a spool of magnetic tape which was not in his possession and was not even his property," the judge stated.

The case started when three subsidiaries of F.B. Clements & Co., a Minnesota partnership, signed a contract with SBC in February, 1963. In 1964 there were found to be many errors in the report given to them and many items were out of sequence. Moreover, the reports were voluminous and difficult to use. The judge contrasted this with the SBC claim that the system would constitute "an effective and efficient tool for inventory control."

Same Errors in Later Systems

In 1965 a second-generation system showed the same sequencing errors and the reports continued to be as voluminous. Clements, however, entered into further contracts in 1966 for a third-generation system.

Relationships were broken off in January, 1967. The damages, amounting to $493,091 less $12,208 owed to Service Bureau under the contract, were primarily for systems and salaries which by June, 1966, had cost the plaintiffs $303,289. Additional costs were involved in the increasing clerical cost and machine rentals, etc.

Input Problems

Particular problems included the use of Flexowriters which SBC claimed had been "forced on it" because of Clements' requirements. The judge said there was no evidence that the "error proneness" present in the use of the Flexowriter had ever been explained to Clements. SBC had maintained that the normal number of personnel could operate the system, but apparently it was found that the

(Continued on Page 4)

And It Works!

It took Michael Halpern, 15, a year to design and build this computer. The teenager now is building a faster, stored-program computer. Story on page 4.

DPMA Puts Up 'Sold Out' Sign For June Show

PARK RIDGE, Ill. – The exhibit space has already been sold out for the Data Processing Management Association's June 16-19 show in Montreal, the DPMA announced last week.

The 1969 International Data Processing Conference and Business Exposition will be held in the East Hall of Place Bonaventure, Canada's newest exhibition facility.

An estimated 20,000 to 25,000 visitors are expected to attend the exposition, a DPMA spokesman said.

Eighty firms will be exhibiting their products and services at the show, he said.

ACM Financial Crisis Being Rectified, President Says

NEW YORK – "We are in a financial crisis," Bernard A. Galler, president of the Association for Computing Machinery, admitted in a recent interview. "We have taken steps to rectify it and are confident we can."

"The roots of the problem go back a couple of years," he said in the interview published in the March 31 issue of *Business Automation News Report*. "We had a dues increase which we believed gave us plenty of money to do the things we wanted to do. Benefits to members were increased and there has been increased headquarters support of chapter activities."

$150,000 Loss

ACM now is expected to lose $150,000 in the fiscal year ending June 30. The proposed budget for next year is $1.8 million, with an estimated surplus of $225,000. (A four-part report on the ACM's financial problems concludes in this issue on page 27.)

"I think this has been enough of a shock," Galler told the newsletter. "We all realize we have to have better control."

The ACM already has begun some belt-tightening changes. The March issue of *Computing Reviews* is substantially smaller, 42 pages compared with an average of 60 pages in previous issues.

Afips Constitution

Another bone of contention has been the new constitution of the American Federation of Information Processing Societies, which reduces to 40% the share of joint computer conference profits to be distributed to member societies.

While the part of the surplus that Afips receives, together with dues received from member societies, can be distributed by the Afips board to member societies, "it is more likely that we shall see a marked increase in activities supported by Afips," Galler stated in the March issue of the *Communications of the ACM*.

In other society actions, George R. Glaser became ACM treasurer April 1, replacing Walter Hoffman, who assumed the position of chairman of the ACM Finance Committee.

Proprietary Documentation for Mark IV Being Released to Public by Informatics

SHERMAN OAKS, Calif. – Documentation for the proprietary Mark IV file management system is now available to the public, according to John A. Postley, vice-president of Informatics, Inc., the developer.

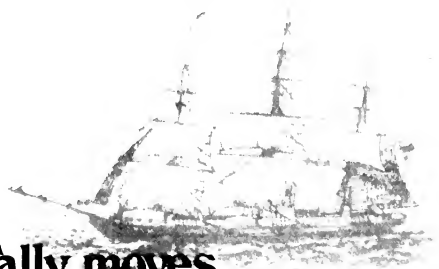
Since its initial release three years ago, the documentation for the package had been restricted to Mark IV customers, but the company feels that "by providing unrestricted access to information about the system's functions and capabilities we are providing a vital service to the computing community," Postley said.

New Version

A new version of Mark IV also has been announced. Mark IV/2 provides several additional features, including greater speed, operation under either DOS/360 or OS/360, coordinated files, and sterling processing, a company spokesman said. The new version sells for $5,000 more than the old, bringing the price to $35,000. Several more features are included at this price, but they will not be installed until September, he said.

The package provides a generalized file and report handling capability for the IBM 360.

The company has its headquarters at 5430 Van Nuys Blvd. here.



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Marshall, Katzenbach Say Suit Won't Affect IBM's Customers

NEW YORK – Burke Marshall and Nicholas Katzenbach, the ex-Justice Department attorneys who now work for IBM, recently commented on the Justice Department suit against IBM. They said in a published interview that the suit would have no effect upon IBM customers. Marshall said that there was doubt about whether IBM actually had 74% of the market as claimed by the Justice Department. He also said he thought that 74% was a comparatively low figure compared with other monopoly suits.

Future, Not Past

In their comments they emphasized the future rather than the past.

Katzenbach pointed out that there was no criminal action alleged and that the government was simply asking for relief in the future. He also said that he could not recall "the antitrust division going into a new field which keeps shifting and changing as much as this one."

Marshall commented that it was "very difficult to make a quantitative measure of where a business like this is going to stabilize at some indefinite date in the future, or even to say how fast you are going to reach that point off into the future."

Lengthy Suit

The length of antitrust suits was estimated by Katzenbach as being a minimum of several months, and, if they went to trial, a maximum of three or four years.

IBM's Apparent Points

Some of the specific points that IBM will apparently use in its defense came to light during the interview. Marshall said that whether or not IBM had 74% of the total industry revenue for sale or lease of general-purpose digital computers in 1967 would definitely be one of the issues. He said that they had discussed this matter with the Justice Department before the suit was brought and that several well-known general-purpose digital computers had been left out of the Justice Department analysis.

74% Not High

In any case, Marshall said, he though that the percentages in other economic monopoly cases had been higher than the government allegation.

Easy Entry

Katzenbach brought out that successful entry into the field had been accomplished by people without any significant capital or other resources. "I can't think of another case in which monopoly has been alleged that this has been true," he stated.

IBM Already Recognized Points

Katzenbach also said that they had a very strong view that there were no grounds for the charges that were being made. Marshall pointed out that IBM had already recognized that the way IBM charges for machines and for support had to be reexamined. "The Dec. 6 announcement goes directly at one of the four things that the government suit complains of," he said.

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Anti-Credit-Fraud System Spots 857 Stolen Cards

NEW YORK – A credit checking system for the protection of Mobil Oil's nationwide network of dealers is said by the company to be working "better than expected."

The system is designed to flag fraudulent purchases. It stopped over 2,500, representing a potential fraud loss of over $100,000, during its first month of operation, the company said.

The dealer is able to phone a regional center and get an answer in less than a half a minute (allowing him to lock the barn door before the horse is stolen) when a purchase is over a given dollar figure.

The computer has alerted dealers to abnormally high activity on more than 60,000 cards, and has enabled dealers to spot and withdraw 857 "hot cards" from credit sharps, the company said.

Both dealers and customers have shown "excellent" reactions to the system, a spokesman said.

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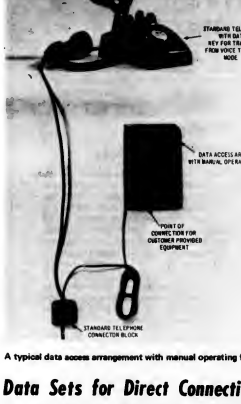
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A typical data access arrangement with manual operating features.

Data Sets for Direct Connection To Telephone Network Available

BOONTON, N.J. – A new series of data sets, which for the first time under recent FCC tariffs can be connected directly to standard telephone lines, has been developed by RFL Industries.

Designated as Series 2056, these data sets offer data transmission users the option of buying their own equipment rather than leasing telephone company equipment.

RFL data sets are two and three state (suited to return to zero operation) which operate at bit rates of 60, 85, 110, 150, 300, 600, 1200, and 1800. They provide interfaces to meet specific requirements. Digital interfaces may be either positive, neutral, negative neutral, or polar (EIA/RS 232B), a spokesman said.

The RFL 2056 series prices start at $350, with delivery of four to five weeks, he said.

The company has offices on Powerville Road here.

World Wide Project Moves Despite Doubts by Brooks

BEDFORD, Mass. – The Air Force still expects to be able to put the large World Wide Military Command and Control System proposal out to bid within three months although many of the questions of policy raised by Rep. Jack Brooks are still undecided, according to an announcement here last week.

The announcement covered the 11 computer selections which should reach the request-for-bids stage this year, and showed the WWMCCS as being probable in the second quarter.

Missing Data

Brooks had claimed, in a February letter to the Defense Department, that there was no sign of feasibility studies or that it had been justified by examination of present equipment. A short response from the department had assured him that the studies he had requested would be made available to him when they were developed.

Multisystem Replacements

The other 10 computer procurements involved include the replacement of nine IBM and Univac computers at the Air Force Logistics Command, replacement of 11 IBM and CDC systems at Strategic Air Command, and replacement of six IBM systems with microfilm equipment at AFLC Micromation.

$300 Million Value Expected

The total value of the 11 procurements is expected to be about $300 million, with the worldwide procurement costing about half this total.

U.S. Court Awards Damages to a User

(Continued from Page 1)

normal clerical personnel were unable to create the input as quickly as had been expected.

Workers Blamed

The size of the damages was partly explained by the fact that SBC apparently continued to claim that it was Clements' workers rather than the SBC system which was causing the problem. The judge felt that under these circumstances, Clements could not be faulted for failing to recognize that the system itself was unworkable.

Other Losses Known

After the case was decided, spokesmen for Clements Auto Co., one of the three subsidiaries, told CW that they still had not recovered all their damages. "Only last week I had an old customer in here," he said, "who told me that he had stopped buying from us because we couldn't get the billing straight. I don't know how much money we lost in customers and in selling material at under cost." The spokesman also said that now the firm had gone back to a manual system and would remain with it until the nasty taste of the computers had vanished from both customers' and employees' mouths.

(In fact, they tried another computer operation with Computo Service in January, 1967, but discontinued it after a few months.)

The Computer System Successful

The SBC contact was not the only one between the firm and computers. In fact the firm is continuing to use an IBM Aid system by Chevrolet, and is very happy with it, the spokesman said.

Boy, 15, Builds Computer, Starts on a Second One

PHILADELPHIA – Soldering wires after midnight, keeping a scorecard of weekend projects, and conversations liberally sprinkled with expressions such as integrated circuits, flip-flops, and stored programs are all part of the world of Michael Halpern, a dynamic, 15-year-old Northeast Philadelphia student.

The son of Mr. and Mrs. Herman Halpern of 7043 Lynford St., and a 10th grade pupil at Northeast High School, Michael recently completed his first computer and is now working on his second model, which he says, will read its instructions off magnetic tape.

Measuring 17 in. long, 13 in. wide, and 4-1/2 in. deep, the first computer is capable of addition, subtraction, multiplication, and division. It took six months to design and another six months to construct.

Total Cost: $66

The youthful designer estimates the total cost of what he calls the MMH 1 (Michael Myles Halpern) Miniature Digital Computer at $66, representing components he purchased at electronic stores in his neighborhood.

For his next computer, Michael is receiving some integrated circuits from Sperry Rand's Univac Division in Blue Bell, Pa.

Besides designing computer hardware, Michael has also been active in preparing his own software. To date, he has worked on programs to translate Latin into English, programs for music composition, and for mathematics applications.

Michael is now writing his own programming language, Pobil (program oriented basic instructional language).

Where does Michael obtain all his technical know-how? His parents disclaim any help.

Chief credit, according to the Halperns, must go to their son's voracious reading of technical journals and books.

Michael expects to have his second computer ready this summer.

New Honeywell 3200 System Mixture Of Features From 4200, 110 Systems

(Continued from Page 1)

Maintenance Procesor

From its larger 4200 and 8200 processors, Honeywell has borrowed a maintenance processor, which is said to enable faster diagnosis and correction of system errors. System software under Mod 4 includes the L-level Cobol and Fortran compilers. Cobol-L will have communications capability, the company said.

Current Honeywell users upgrading to the 3200 will be able to recompile source programs written for use under Mod 2 (or relink Go file modules). Mod 1 users can use a routine called Easyup to convert source programs to Mod 2, then recompile for Mod 4 use, the company said.

Prices

A 3200 processor with 131K of memory, 8,144,000-character-per-second magnetic tapes, 55 million characters of disk storage, an 1,100-line-per-minute line printer, card reader/punch, and console typewriter will rent for $18,895 per month on a five-year contract, the company said. 3200 processors rent for $9,220 to $22,085 per month. Sale prices range from $479,750 to $1,037,270.

Deliveries are scheduled to begin in February, 1970.

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Use of Cobol Growing, Survey Indicates

WASHINGTON, D.C. – A study of the current trends in the use of Cobol, its applications, and its shortcomings has been jointly released by the U.S. Navy and the Conference on Data Systems Languages (Codasyl). The study, made by Auerbach Corp., sampled some 6,870 installations and received about an 11% response.

Several Pertinent Factors

The responses indicated certain factors in the growth of Cobol, including a trend toward the greater use of Cobol (75% to 100% of the programming done in small IBM installations is done in Cobol; among users of other manufacturers' equipment, Cobol, Fortran, and Assembly Language are used equally).

Two-thirds of the respondees said they have established a standard Cobol within their installation.

The respondees felt that Cobol's most valuable characteristics were documentation, ease of learning, and machine independence. A definite need was indicated for bit manipulation, teleprocessing, and data communications capabilities.

A cross-analysis of the questionnaire was performed to provide some cross-checking of the results, and a large portion of the report deals with these analyses.

The report was prepared for James G. Woodruff, special assistant to the secretary of the Navy, and was submitted to Cmdr. Grace Hopper of the Programming Languages Group. Information about the report may be obtained from the Codasyl Planning Committee, P.O. Box 124, Monroeville, Pa. 15146.

Use of APL for New Time-Sharing Service Is Seen Providing Unusually High Reliability

NEW YORK — A new time-sharing service, based on Iverson's APL (A Programming Language), has been announced by APL-Manhattan for operation in early June. The Manhattan firm intends to use a 360/50 with 30 simultaneously connected remote terminals, based on Selectrics rather than Teletypes. The firm expects to achieve unusually high reliability, avoiding the crashes which have been experienced by some time-sharing services.

10-Months' Experience

Karl Korn, president of the new firm, told *Computerworld* that he based his statement of high reliability on the experience he and James H. Lamb had while with the Western Electric Engineering Research Center. They used the system with two terminals from May 1968 until they left the center in February and experienced no detectable crashes in the system.

Korn said that he felt that this experience allowed him to promise high reliability to his customers, even though APL is currently a Type 3 product and is therefore in the "unsupported" category as far as IBM is officially concerned. "I think the phrasing should be 'not yet an IBM product,'" he told CW. "It is clearly going to be a product shortly," he said.

IBM Resistors Converted

Support for his statement about performance appears in the IBM APL/360 documentation which says that it has had a much greater effect on internal operations than had been anticipated. APL was introduced as a research project late in 1966 and by the end of 1967 it had materially affected the pattern of behavior of people in the research division.

"Many professional staff members who formerly were indifferent to, or actively resisted, the use of computers, have become steady users of the APL system," the documentation prefaces states.

APL-Manhattan is the first East Coast firm to announce an APL service, but a West Coast firm, Marquardt Corp., announced its intention to market it last October [CW, Oct. 16].

The pricing of the service is to be $12 per hour of connection time, including up to one minute of computer time free. Further use of the central processor will be charged at $5 a minute.

Storage on the new service will be charged at $1 per month per 2314 track (7,200 characters) with an allowance of 64,000 characters free to each subscriber.

APL-Manhattan intends to bar anyone from using Assembly Language programming in the background while time-sharing is in operation. Korn said that he felt that this was not a safe way to operate. On the other hand, high level languages, such as PL/1, Fortran, and Cobol, will be run in the background.

(See editorial, Attention for APL.)

SicGraph Wants To Form Group

NEW YORK — ACM's Special Interest Committee on Computer Graphics said last week that it was trying to convert itself into a special interest group. It is looking for 100 ACM members to sign a petition in favor of forming the group.

Sam Matsa, Sicgraph chairman, asked ACM members prepared to sign to contact him at P.O. Box 539, Lenox Hill Station, New York, N.Y. 10021.

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Teller's Terminal Accesses Bank's Computerized Files

PHOENIX, Ariz. – A new special data terminal is designed to give each teller immediate access to information stored in a bank's central computer.

The Omnitec banking terminal has a special numeric keyboard for each teller's position.

Records of a depositor's balances, interest, payment amounts, or other information can be checked immediately, the company said. Queries are originated through simple codes and depositors are identified by account number.

The terminal converts keyboard pulses to selective audio tones for data transmission over standard telephone lines to the bank's central oomputer. Queries are processed and answers returned in the same manner, and printed out on paper tape at the teller's terminal, according to the company.

This new terminal has a special numeric keyboard for inputting information to a central computer and a strip printer for hard-copy printout. The 25-pound unit uses standard 115V electrical outlets for power.

Omnitec Corp., 903 N. Second St., Phoenix, Ariz. 85004.

Typewriter to Mag Tape

Modular data recording systems said to be capable of producing hard copy simultaneously

with magnetic tape ready for the computer have been announced. They will compete with IBM's MT/ST, and with other key-to-tape devices that don't give printed copy.

The Facit 6000 series offers a choice of any of three standard 10-key adding or accounting machines as the input unit.

The 6003 uses an adding machine to produce a printer paper-tape as well as magnetic tape, according to the company.

The 6004 uses an adding machine with a tabulating carriage to produce printouts on journal rolls and account cards for checking purposes. The 6005 accounting machine input creates hard copy printout while producing magnetic computer tape, the company claims.

The Facit 6200 series inputs typewriter to magnetic tape and typewritten hard copy.

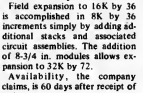
Facit magnetic tape recorders record 7 or 9 track, one-half inch magnetic tape at 200 BPI. Both even and odd parity are said to be available.

Facit-Odhner, Inc., Secaucus, N.J.

Core Memory System

The ComRac 1000 core memory system is said to use 3D selection, fast switching 20 mil cores, and integrated circuits to achieve high speed, high reliability, and high density.

It features cycle time of 900 nanoseconds and an access time of 350 nanoseconds with memory capacities up to 32K



72-bit words, according to the company.

It is packaged in 19 in. rack-mounted 16K by 36 modules.

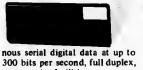
Field expansion to 16K by 36 is accomplished in 8K by 36 increments simply by adding additional stacks and associated circuit assemblies. The addition of 8-3/4 in. modules allows expansion to 32K by 72.

Availability, the company claims, is 60 days after receipt of order.

Information Control Corp., 1320 E. Franklin Ave., El Segundo, Calif. 90245.

Compatible Data Set

A new data modem is said to transmit and receive asynchro-



nous serial digital data at up to 300 bits per second, full duplex, on two-wire facilities.

The Transidata T103A features end-to-end compatibility with Western Electric 103A series data sets, 804B data auxiliary sets, and 801A and 801C automatic call units, according to the company.

Two versions of the T103A are available – the T103A for use in TWX-CE service, and the T103A2 for use over the direct distance dialing network.

Sangamo Electric Co., P.O. Box 375, Springfield, Ill. 62705.

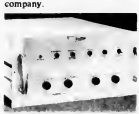
Modem Duplexor

A data modem said to increase the capacity of a 2400 bits-per-second voice grade line to 9600 bps is available.

New Products

The AE-96 Modem achieves this capacity by means of a digital adaptive equalizer.

This allows the AE-96 to measure and compensate automatically for the intersymbol interferences caused by circuit amplitude and delay distortion which had previously limited high-speed data transmission on telephone circuits to a maximum of 4800 bits per second, says the company.



The modem operates on international submarine cable and satellite circuits as well as on United States telephone lines.

They are available 90 days after receipt of order, according to the company.

Codex Corp., 150 Coolidge Ave., Watertown, Mass. 02172.

Graphic Display System

A computer-driven graphic display system capable of analyzing TV, radar, and other analog inputs simultaneously with computer-generated data has been

designed for stand-alone or remote computer applications in scientific research, command and control, management information, dynamic testing, computer-aided design, simulation, training, and other applications.

The Adds/900 (advanced data display system) is said to feature mixed-mode and time-shared operation of one or more displays, high-speed function generation, a variety of editing devices, and a small integral computer with comprehensive software for the system.

The system has four basic elements: a display processor, display generator, data entry devices, and display indicators, providing expansion through off-the-shelf building-block modules.

Sanders Associates, Inc., Daniel Webster Highway South, Nashua, N.H. 03060.

Mag Tape Transport

A new tape transport records incrementally at 1,000 cps and continuously at 75 ips with a data transfer rate of 60 kHz.

Data packing is at densities of 1,600, 800, or 556 bpi on IBM-compatible tapes.

The BI 830 is a single-capstan recorder using three heavy-duty, high-torque printed-circuit motors with the optical encoder, tachometer, and capstan motor on one rigid shaft.

The unit is also available with incremental read at 400 cps and continuous read at 75 ips.

Bright Industries, Inc., One

Maritime Plaza, San Francisco, Calif. 94111.

Recording Surface

A new, hard metallic high-density recording surface for disk or drum computers has a thin-film nickel cobalt recording media that is chemically deposited in thin layers to provide an increase in bit packing capability.

The surfaces permit depositing the recording media on any metallic substrate in a homogenious film less than 0.2 microns thick. Suitable for contact or flying head recording, the surfaces may be applied to computer disks to 40 in. in diameter or drums to 18 in. in diameter. Burton Magnekote, Inc., Culver City, Calif. 90230.

Key-to-Tape Input

A key-to-tape input system for computers that, according to its designers, "will enable keypunch operators to up efficiency, 30 to 50 percent," has been announced.

The Cybercom Mark i key encoder is said by the company to be compatible with any computer now being produced by a major manufacturer.

It is designed to permit the keypunch operator to determine exactly what data is being programmed, also indicating and

diagnosing errors automatically, allowing instant correction.

Its equipment includes a typewriter-size encoder which records on cassette tape, and a translator, which pools the cassette's information on computer tape.

Cybercom Corp., 432 Toyama Drive, Sunnyvale, California 94086.

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Input Methods Needs of 70s Call for Required Planning Now

SAN FRANCISCO – "To meet the input methods needs of the '70s, computer systems designers must plan their data processing requirements now," said Paul A. Monahan, "particularly in regard to the peripherals that will surround the central processor."

Monahan, senior vice-president of Recognition Equipment Inc., delivered the keynote address before the Systems and Procedures Association annual meeting in San Francisco.

"In the design of information systems for the '70s, the selection of a central processor may be the last consideration," Monahan said. "Of far more importance will be the proper selection of peripheral devices," he added.

With rapid growth of optical character recognition (OCR) and other new input methods, the systems designer is presented with a bewildering array of alternative approaches to input. Monahan said, "Choosing from them and when are the important decisions facing the systems planner."

The job of the systems designer will be harder, not easier, because of the choices available, according to Monahan. Illustrating his point, he cited the significant changes in the kinds of OCR systems and the ways in which they will be used, including the development of remote reading terminals, handprinting reading capabilities, and the use of large-scale OCR systems on a service basis.

"Although the economic significance of these changes is dramatic, the changes themselves are evolutionary, not revolutionary," Monahan concluded.

Graphics Group National Conference Will Be in Dallas

HOLLYWOOD, Calif. – The Association for Precision Graphics will hold its third national conference in Dallas, June 5 and 6.

Papers will cover such topics as systems planning, applications, operations, photographic techniques, maintenance of equipment, and automated drafting. In addition to technical paper sessions, the conference will feature specialized discussion groups, distinguished speakers, an art exhibit, and plant tours.

Further information can be obtained by writing W.G. Reimann, Chairman, The Association for Precision Graphics, 8163 Willow Glen Rd., Hollywood, Calif.

AMA Seminar Speaker Explains Advantages to Small Businessman

NEW YORK – David Shefrin, president of Computer Processing Corp., Hartford, Conn., was a principal speaker April 1 at the American Management Association's Spring Seminar in New York City.

Computer Processing is a subsidiary of Computer Systems & Education Corp., which recently was acquired by Datamation Services, Inc., New York City.

Shefrin's topic was "Computerized Accounts Receivable Systems." His speech included an explanation of an advanced concept that gives the following advantages to the small businessman:

An Edit Report, which replaces the original entry journal; Accounts Receivable Posting Journal, an audit trail of all transactions posted; Aged Trial Balance; past due listing, which provides delinquent accounts selectively; Customer Status Report, an accounts receivable management report; and Customer Statements, collection-oriented for greater cash flow.

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Editorial

Attention for APL

One of the curiosities in the industry for the past five or six years has been Iverson's APL, otherwise called A Programming Language. Appearing originally in the early '60s, it attracted much the same type of specialized attention that was given to, say, Neliac with its interesting decompiler techniques. The title and the textbook were written to communicate with a specialized audience. This they did but remained almost unintelligible to the ordinary practitioner.

Recently, however, as readers of CW will be aware, APL has been moving into the orbit of ordinary users. Although it is not an officiel IBM product – at least as yet – it starred in IBM's exhibits last fall. A West Coast firm end now an East Coast firm have decided that it has major potential in the time-sharing merket. Indeed, Karl Korn, president of APL-Manhattan, suggests that it should be called A Permenent Language rather than just A Progremming Language.

All the indications are that APL is something different from the current user languages. It mey be that it is in fact a quiet harbinger of e real revolution. The signs are there.

CW will, of course, keep you informed, but we suggest that you pay particular attention to anything you hear about APL. *It could be as important as Fortran was in 1956!*

A Round-About Route

The initiative of our Canadian friends in getting Cobol-68 onto the printing presses is to be commended. Even more important is the fact that they ere preparing to provide en updating service for the manuals, something that has been badly needed since 1960. The price also can hardly be faultad. There isn't much you can do with $1.75 American nowadays in the Cobol area, so $1.75 Canadien is a real bargain.

But while passing bouquets eround, it is perheps necessary to look at the other side of the coin. Why, for instance, has a Canadian version come out ahead of the anticipated American version? Why has this version of Cobol-68 come out when the Cobol Standerd, which is primarily based on Cobol-65, has yet to make an appearance?

The answer to both these questions appears to be in the position of the Conference on Data Systems Languages. This group, although it has worked well end successfully for the past 10 years, has still to achieve e rational place in the computer hierarchy. It does not publish anything itself, but sends its materiel to the government for publication. It does not make standards, but works through the appropriate committees of the USA Standards Institute. In short, it works through middlemen.

It appears to CW that, time being as important as it is, the Conference should consider taking e more direct part in bringing its activities and its veluable results to the world. It has grown up now and reasonably can think of working without the intermediaries which slow the publication of vital materiel.

"We're Calling It 'The Plug Compatibles' Nowadays"

Letters to the Editor

Software Inventor Challenges His Challenger's Statements

Lawrence Pfeffer should have mentioned the IBM 709 instruction, ESNT (Enter Storage Nullification and Transfer). This instruction was of the same type as the two examples cited in his letter [CW, March 12], although it preceded them both by several years. There are other examples of instructions which set machine states, thereby determining the interpretation of subsequent instructions. Some do this explicitly and some implicitly; his examples fall into the former set. An arithmetic instruction which may or may not set an overflow indicator does so implicitly.

However, neither of his examples are techniques for decreasing the number of bits required to represent a given number of instructions (or conversely, to increase the number of instructions that can be represented by a given number of bits). The first example (referring to the Read Only Storage Select on the IBM 360) is a technique for enabling a computer to simulate another computer. Some computers do this with a switch, whereas the technique cited does it under program control and is therefore an improvement. This is analogous to setting tape parity under program control instead of with a switch as was done on some older computers.

The second example cited refers to the "Memory Extension" feature of the PDP-8. This is a paging control feature and is a necessary requirement when 32K of storage is placed on a PDP-8. All small word size computers have this problem and have attacked it in a number of ways, some solving it more conveniently than others. The "Extended Arithmetic Element" (in spite of its name) is also totally unrelated to my patent. The "Extended Arithmetic Element" utilizes microprogrammed instructions to provide additional arithmetic capability. These are nonmemory referencing commands with the data embedded in the program.

A study of the patent will reveal that the essence of the invention is that the interpretation of each instruction is determined by the previous instruction executed and that this determination is made by considering which instructions would most probably be encountered following that previous instruction. By eliminating the instructions that would be unreasonable or unlikely, the number of instructions needed to be represented can be reduced and therefore the number of bits needed to represent instructions can be reduced. I know of no other implementations of this technique, and I would welcome references from anyone who does.

The resistance against software patents is formidable and unwarranted. Mr. Pfeffer may rest more easily if he knows that I have no intention of claiming coverage of instructions which set a specific status for a specific purpose (not my own) nor instructions designed to control the memory paging problems on small word size computers. We both agree that these belong in the public domain, at least until someone comes up with a new technique which is novel, nonobvious, and useful. (Don't bet that it won't happen.)

David E. Ferguson
President
Programmatics, Inc.
Los Angeles

Handling of SJCC Space Is Questioned by Exhibitor

There is good reason to object to the way display space is being allocated for the Spring Joint Computer Conference in Boston next month. One should ask Afips why there is a shortage of space, especially since the growth of new hardware companies is a public fact.

Compared with the Fall Joint Computer Conference in Brook Hall, San Francisco, the accommodations at the War Memorial Auditorium have permitted Afips to honor only 60% of the space requests.

We primarily object to the method of allocation; i.e., giving priority to companies which have previously exhibited. The computer industry would rather see a new product, or a product by a new company, than the same IBM 1130s, etc. I would like to see how much wasted space the large exhibitors "display" come May.

(Name withheld by request)
New York

Protection Plan Endorsed

The Applied Data Research proposal to the Patent Office [CW, March 26] to use each computer's serial number as a means of protecting proprietary packages is heartily endorsed by Data Usage.

Last August we suggested this exact scheme to IBM but were turned down for rather vague reasons.

Incidentally, our proprietary package Documatic uses an analagous scheme. We print the customer's name at the top of each page of output. Built into the program are various tests which cause Documatic to malfunction if there is an attempt to change the name.

Gary Mokotoff
Data Usage Corp.
Fort Lee, N.J.

CDP Information Sought

I am interested in learning more regarding the CDP [Certificate in Data Processing] Exam.

Please advise as to the address to write to for additional information.

Barry R. Heinzel
Saginaw, Mich.

Write to: Data Processing Management Association, 505 Busse Highway, Park Ridge, Ill. 60068. Ed.

The View From Burroughs

Can a Good PL/I Compiler Be Written?

Recent announcements by IBM that PL/I programs converted from other languages run slower and use more core than the originals have again raised questions as to whether PL/I is a worthwhile language.

Here is the viewpoint of Burroughs Corp. – the only other computer manufacturer who has announced a firm intention to provide a PL/I compiler. The position was first stated at the Second Annual PL/I Forum last year.

By Richard Waychoff
Burroughs Corp.

My definition of a good PL/I compiler is one that compiles sufficiently fast, and generates good enough code, so that no significant penalty in performance is paid for the use of PL/I in place of any other available language.

For example, if I have a random set of 100 scientific programs coded both in PL/I and Fortran, and if the execution of the PL/I versions require significantly longer than the Fortran versions, then I do not have a good PL/I system.

Within this definition, I do not believe that a good PL/I compiler can be written for any conventional machine. Computer manufacturers are going to have to make some strong concessions to the language in the architectural design of their hardware.

Let us look at some examples of what happens when a language is or is not properly considered in the design of a piece of hardware. In 1960 Burroughs decided to build a medium- to large-scale scientific computer. The way that we design computers is to choose an application area or areas, then choose a language or languages that will be convenient for expressing solutions in that area, and then design a piece of hardware that will efficiently execute code that is generated by a compiler for that language.

Designed for Algol

In 1960 we felt that the best scientific programming language was Algol 60. Thus we designed a system, the B5500, that would efficiently execute Algol 60 programs. That was many years ago, but I still don't know of a system today that is better organized for the execution of Algol 60 programs with the exception of its successor, the B6500.

But Not for Cobol

Cobol and Fortran compilers were also done for the B5500, but those languages were not seriously considered in the design of the hardware. Consequently the code produced by the Cobol and Fortran compilers is no better than anyone else's Cobol and Fortran code.

As it turned out, 70% of our users are Cobol users, due to the multiprocessing capabilities of the system, not to any fantastically efficient Cobol code.

Cobol – But Not Fortran

In 1964 we decided to build a small- to medium-scale commercially oriented system. So we designed a machine that is very good at executing Cobol programs. This because the scientific languages were ignored. Thus the system is not a very good machine for the execution of Fortran programs.

All that I am trying to point out by these examples is that language requirements must be considered by the logic designers of the hardware if a good system is to be produced.

Problems for Designers

There are some problem areas in PL/I that are not generally considered by hardware designers. Three of these are recursion, multitasking, and nonlocal addressing.

Systems programmers have known for a long time that a very nice way of handling recursion is with a pushdown stack. Local variables, return points from procedures, and temporary results of expressions can all be held in the stack.

Multitasking simply implies a new stack for each new task with the root of the new stack planted in the parent stack.

It so happens that these difficulties in the PL/I language are also present in the Extended Algol language. The Burroughs 6500 computer system was designed to handle Extended Algol, much as the original Burroughs 5500 was designed for the original Algol language. As a result, its design does include the pushdown stacks needed for recursion, the multiple stacks needed for multitasking, and a way of handling the nonlocal addressing problems based on using an address "couple" rather than a unique single value item.

These were needed for Extended Algol, and we currently intend to use them for PL/I. We hope to provide a good compiler through their use – but only because we happen to have the necessary design characteristics already built into the system. If we did not have them there – if indeed we had only a conventional computer – then I do not believe that we would be able to provide a good PL/I compiler within the meaning of my definition.

Role of Systems Programmers

I don't think that anything I have said is any deep, dark secret to systems programmers. These techniques have been known to us for years.

For too many years, manufacturers have been confusing circuit designers with logic designers. If a good PL/I system is to be produced, then systems programmers must make themselves heard in the hardware design meetings.

Prater and Wei: Two Judges Criticize Patent Office

WASHINGTON, D.C. – The now famous case of the patent application of Prater and Wei was reargued in the Court of Customs and Patent Appeals in Washington on March 3. Readers will recall that many people believed that the decision rendered by the late Judge Smith in November, 1968 cleared the way for the granting of patents on programs. Thereafter the Patent Office petitioned for a rehearing, arguing among other things that the court had allowed the patenting of a mental process.

The Patent Office also raised the possibility that this would "confer upon a patentee the right to exclude others from thinking in a certain manner" [CW, Jan. 1] and suggested that this might be a violation of the First Amendment on freedom of speech.

Despite opposition from the successful patent claimants and from the Association of Independent Software Companies, the petition for rehearing was granted by Chief Judge Worley, Associate Judge Baldwin (newly appointed), and by Judge Kirkpatrick, a retired judge from Pennsylvania who was assigned temporarily to the court.

Two Judges Dissented

Judges Rich and Almond dissented from granting the petition for rehearing on the ground that it would "serve only to foster uncertainty in the law, to encourage the Patent Office in its policy of refusing to follow what this reviewing court has now declared the law to be and to have been, at least since 1952, and to prolong the controversy about what the law is." The dissent – which is several hundred words long – indicates quite clearly that Judges Almond and Rich will probably vote to confirm the prior opinion. The other regular judges at the reargument may change their minds. Judge Kirkpatrick, who was sitting with the court in November but did not have an opportunity to consider the opinion of Judge Smith, was not at the rehearing; retired Judge Maguire from Washington, who likes patent cases, sat instead.

The case for the Patent Office was argued before the court by Joseph Schimmel who had retired three days previously, having served for many years as solicitor or chief lawyer of the Patent Office. The main proponent of the court's original opinion was Virgil Woodcock, counsel for the patent applicants. Briefs and oral arguments as *amici curiae* (friends of the court) were made by three well-known patent lawyers: W. Brown Morton for IBM, Morton Jacobs for Applied Data Research, Inc. and the Association of Independent Software Companies, and Howard Popper for Bell Telephone. A brief was also filed by D. Allegretti and Henry Hanson on behalf of Honeywell.

No Software Involved?

One of the interesting things about talking with the lawyers who argued these cases is that there seems to be almost unanimous agreement that the case does not involve computer programs. A Patent Office source said the office regards the case as important because of the breadth of the claims which were made by Messrs. Prater and Wei. This source said that if the court stands, Patent Office procedures in all areas except chemicals will be affected. It is interesting to note, however, that Edwin Reynolds, the acting commissioner of patents, in testimony before the Brooks Committee in July of 1967, specifically stated that the case raised the issue of the patentability of computer programs under the present law even though the case was not directly concerned with a computer program. But the Patent Office management generally avoided discussion of software.

Honeywell, however, in support of the Patent Office, talked only about programs and argued that if computer programs could be patented the user and the programmer would have to worry about infringement and software houses "would not be capable of providing a meaningful patent indemnity to a user." Noting that copyright protection is available for programs, Honeywell argued that the practice to date of denying patents and allowing copyright registration has "promoted the progress and growth of the computer industry, and their change through the interpretation of this court's ruling in the present case, upon what is believed to be an insufficient record . . . would, in Honeywell's strong view, thwart the constitutional purpose."

IBM, in a more detached approach, argued that computer programs really weren't in the case at all, summarizing its position by saying, "The inclusion of a general purpose digital computer in the best mode of carrying out an innovation neither confers upon nor removes from that innovation the quality or nature of being a patentable invention." IBM found the decision of the court wrong and argued it should be changed. Woodcock, arguing for the claimants and adopting almost the same language, came out with the opposite result – and Morton Jacobs, noting that the software industry has a great stake in the patenting of computer programs, argued that all the software man wants is the same protection for software programming as the hardware manufacturer now gets for hardware programming.

Howard Popper, arguing for the Bell System, summarized his position by saying, "Judge Smith's opinion is just beautiful, and needs no changes."

Positions Summarized

In summary, the positions in the reargument line up as follows:

- The Patent Office: Computer programs are not patentable, they are only mental processes, and if the patent is granted in this case the entire Patent Office procedure will have to be changed.
- Mobil Oil Co. (Prater & Wei): Let's stick to the facts of the case and if a computer plus a program, when applied to industrial technology, is new, useful, and not obvious, it's patentable.
- IBM: This case was not argued sufficiently and not enough people were heard on the subject of program patentability. This is not the case to decide it. But if the court does want to decide it, programs aren't patentable.
- Bell Telephone (which has its own case involving a computer program pending – Mahoney, # 8216): Granting a patent in this case will not cause problems.
- Honeywell: "Computer programs are not patentable under the present patent statutes, and a ruling to that effect by this court will clear the air of the confusion and misinterpretation existing within the patent bar and the computer industry because of the present decision . . ."

And so we wait for the court's decision. The next appeal would be to the Supreme Court of the United States which might or might not choose to take it. If Prater and Wei lose, their lawyer will decide whether to appeal. If the Patent Office loses, the decision will be up to the new solicitor of the Patent Office who must get the approval of the commissioner of patents, the solicitor of the Department of Commerce, and the solicitor general of the United States.

The case may be with us a long time before it is finally decided.

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UCC Gets Microwave License But Not for Common Carrier

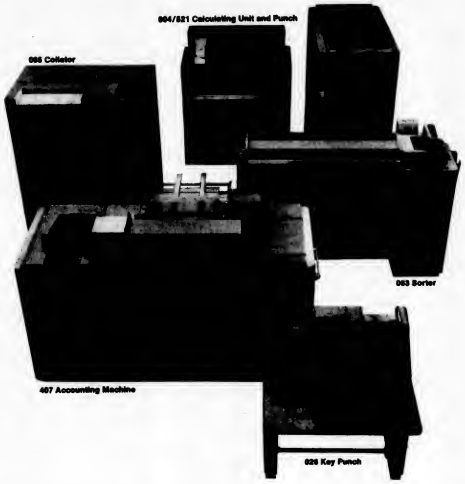
WASHINGTON, D.C. – University Computing's bid to set up its own common carrier for data transmission has run into objections from the Federal Communications Commission and two cable television companies.

The FCC approved UCC's takeover of a cable television microwave link, but it warned that this should not be construed as prejudging any of the issues of the computer inquiry into data processing services by common carriers.

The stations involved are Central California Communications Corp., and Microwave Communications Inc. (MCI). They stated that a computer company should not be permitted to enter common carrier communications until the commission completes its inquiry.

FCC said that the prime concern of MCI and Central California is the possibility that Microwave Transmission Corp., (MTC), as a subsidiary of UCC, may seek to combine the common carrier communication facilities with computer services and facilities for the offering of various computer utility services.

MTC denies any present intention of converting the microwave facilities to data transmission use. The facilities, formerly owned by TransAmerican Microwave, Inc., serve 11 CATV systems and three TV stations in California.



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16 in Sing Sing Get Computer Diplomas

OSSINING, N.Y. – Sixteen men have been awarded diplomas at Sing Sing Prison, marking the completion of an in-prison computer programming training course.

Nine of the men are currently inmates. For seven of the men, the ceremony marked a return visit to prison. They had been paroled.

Sen. Charles E. Goodell, R-N.Y., addressing the assembly of government officials, business executives, and invited guests, called for an extention of the program to other prisons across the country. Meaningful rehabilitation programs are needed in all prisons, he said.

Of the 65 inmates who applied for the class, 20 were accepted. Sixteen remained to complete the program.

"Since our success here at Sing Sing," said Sidney Davis, president of Electronic Computer Programming Institute, "we have introduced similar programs in the Lebanon Correctional Institution in Ohio, and in the Luzerne Prison in Pennsylvania. Prisons in several other states, including Iowa, Minnesota, Connecticut, New Jersey, and California, are now looking upon computer programming training with extreme interest."

For one member of the current class, computer training has meant a chance for freedom and the start of a career rather than an additional two years in prison.

Bernard W. had been sentenced earlier this year to an added two-to three-year term in a New Jersey state prison arising from an arrest prior to his imprisonment in Sing Sing.

In a rehearing, New Jersey Superior Court Judge Augustine Repetto was informed of the prisoner's computer training and rehabilitation at Sing Sing Prison. Backed by letters from Warden John T. Deegan and the promise of a job by ECPI, Judge Repetto paroled Bernard W. Bernard W. will be released from Sing Sing next month and will begin his data processing career.

Breeze Through Library By Electronic Browsing

By a CW Staff Writer

BETHLEHEM, Pa. – In the library of the future, it may be possible to "browse" electronically through a fund of knowledge stored in a distant computer.

A new information system, under development at Lehigh University here, is already enabling researchers to do this. Leader (Lehigh automatic device for efficient retrieval) is a project of the university's Center for the Information Sciences under a grant from the National Science Foundation.

The computer used is an IBM 1800 data acquisition and control system.

With Leader, the researcher types English sentences on the keyboard of an IBM 2260 visual display terminal to query the computer. As the research progresses, he may revise his original questions, or come up with new ones, based on information provided by the computer.

If he decides to amend his original request, he is presented with descriptive phrases related to the new request

"Until now, most experimenters have looked on inquiries and responses as single events. We believe, however, that an inquiry is merely a 'micro-event' in the shifting, adaptive process," said Professor Donald Hillman, director of the center.

"Our aim is to have the computer instruct the researcher in how the stored information is organized. He is led to browse in the general area of his inquiry and to broaden or narrow it as he wishes. The system also helps him choose the best search strategy," he added.

Bridgeport, Fairfield University Use Joint Data Processing Center

By a CW Staff Writer

BRIDGEPORT, Conn. – The City of Bridgeport-Fairfield University Data Processing Center and the university's computer-assisted instruction center were dedicated in ceremonies conducted at the Campus Center Lak Room here.

T. Vincent Learson, president of IBM Corp., delivered the principal address of the program. He praised the city and university officials for undertaking this innovative cooperative venture when sociologists cite a trend of growing alienation between these powerful institutions of our society.

He said that the joint acquisition of sophisticated hardware is the first step in realizing the benefits of computers. "The real payoff will be realized through the imagination of the users," he added.

Programs are underway for further development in two experimental areas of computer science. API, a conversational problem-solving language, is being developed to offer students a quick and easy way to use computers.

Fairfield University's computer-assisted instruction field is one of about a dozen experimental centers across the country.

"We will be given a chance to explore the unknown through the use of this powerful tool and seek solutions to the scientific, social, and academic challenges," said the Very Rev. William C. McInnes, S.J., president of Fairfield University.

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Lockheed typing for plug-compatible mass memory.

Plug-In Mass Memory Designed For Univac 494s, Large 360s

By Peter L. Bruce
Computerworld

LOS ANGELES — IBM 360 and Univac 494 users can now obtain large, fast, mass capacity storage (beyond main memory) of up to two million bytes (characters) of information at 2.5 bytes per microsecond transmission rate, according to Lockheed Electronics Co.

Shrewd Deals for S/360s

The unit can operate at 2.5 megabytes per byte. Lockheed said, but the company's first S/360 requires a minimum of 3.2 megabytes of information to run with the S/360 plug-compatible unit on any S/360 or S/370 system require more main memory, for high-speed access, or where data are updated and kept in the machine's memory on-line. (Continued on Page 11)

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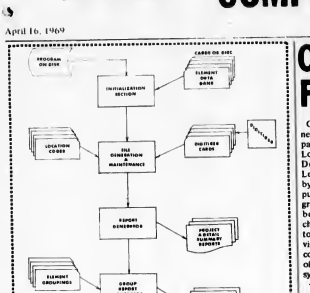

QTO/COST

Cost-Estimating Package Designed for Architects

BOSTON – A new software package called QTO/Cost, an automated "quantity take-off" and cost estimating system, is being offered by Cullinane Corp. It is designed primarily for architects and construction companies but has general features that make it applicable to other cost-estimating applications.

The QTO/Cost program was developed by Design Systems Inc. of Cambridge, Mass., and has been used for some time. It is being distributed by Cullinane Corp. under an exclusive contract.

The system requires either an IBM 1130 with 8K, one disk, card reader, and printer, or an IBM 360 configuration which supports DOS or OS and Fortran, a Cullinane spokesman said.

Input to the system is manual or by means of an x-y digitizer whereby construction drawings are converted to punched cards. The cards thus produced also contain the drawing number, a location code indicating what part of the structure the drawing concerns, an element code indicating the material, and the scale of the drawing. If counts of items such as fixtures are involved, the number of items can be entered directly from a keyboard connected to the digitizer, he said.

The program produces cost estimates by retrieving unit labor and material costs for building elements from a codified data bank, he said, and a data bank is available as part of the QTO/Cost program which contains labor and material costs for thousands of architectural, structural, mechanical, and electrical elements, priced to represent current costs for any city within the U.S. Users of the program can alternatively maintain their own data banks.

Cost estimates can be produced so that they are organized according to the Construction Specification Institute's coding of building materials, or according to any alternative grouping the cost estimator wishes to specify, the spokesman said.

As an indication of program speed, a costing of a $150,000,000 dam was completed in two hours including setup and readout, he said.

A fully detailed descriptive report is available from the company at 60 State St. here.

Price for the QTO/Cost system is $25,000. Included with a library of routines for report generation and data bank maintenance is an initial copy of a data bank of building materials and labor costs, he said. Also included is installation, modification when necessary, maintenance, training in generation and use of the system, and complete user and operating documentation, he said.

On-Line Commercial Loan System For Spectra 70 Offered by RCA

CHERRY HILL, N.J. – Four new bank application software packages – On-Line Commercial Loans, Corporate Trust, Time Deposits, and Installment Loans – have been announced by RCA for its Spectra 70 computer line. The complete programs and documentation will be provided without added charge to customers, according to L.E. Donegan, Jr., division vice-president. RCA thus becomes the first manufacturer to offer an on-line commercial loan system, he said.

The new packages, along with Demand Deposit Accounting, Proof and Transit, and other programs, provide RCA with complete packages for bank data processing, said Donegan, adding that the programs will operate on a minimum configuration of the Spectra 70/35 with 65K core and four tapes or disks. The packages are upward compatible with the Spectra 70/45, 70/46, and 70/55 systems.

All four of the new packages employ Cobol and will operate under RCA's TDOS/TOS or DOS, an RCA spokesman said.

The On-Line Commercial Loan package is a disk-oriented system based on total customer relationship rather than individual loan, he said. Both video data terminals and teletypewriters are supported for inquiry and response. The system may be operated off-line if desired.

The Corporate Trust package provides complete stockholder accounting in five basic modules for stock transfer, cash disbursement. A unique feature is the utilization of a certificate file to improve handling of surrenders, he noted.

The Time Deposit package handles all types of savings, clubs, and certificates of deposit, including both passbook and statement accounting, the spokesman said. Tax reports, all dends, stock dividends, proxy listings, and tax reporting, he combinations of interest calculation, and accruals are processed by the system, he said.

The Installment Loan package provides complete consumer credit accounting and management reporting based on sequential tape processing, he said.

Graphics System Planned For Architectural Work

BOSTON – An in-house architectural computer graphics system with a small computer connected by telephone to a large, time-shared computer, a digitizer, an incremental plotter, a high-speed printer, a card reader, and a CRT is being developed by Design Systems.

The first prototype of the system, called Adept, will be installed in an architectural office here in four to six months, a company spokesman said. It will have the following capabilities:

- The ability to develop and generate basic area requirements for building programs, including costs, phasing, circulation, and nonquantitative elements.
- A program to develop appropriate functional relationships between elements of the architectural program.
- A program that develops alternative diagramatic plans to scale following the architect's parti for relationships between the various building areas.
- A space-allocation program that calculates interactions between spaces and nonquantitative attributes through the use of a "structure-finding" algorithm which breaks up a matrix into desired subsets.
- A text-editing program to enable the designer to interact and edit a master specification stored inside the computer.
- A cost control program that will enable the architect to create a model of the decision-making process of a design project. This program will enable an architect to monitor continuously and produce Critical Paths for any project.
- A computer perspective program that generates any number of perspective drawings at any scale from the same set of data.

General Retrieval System Is Available

NEW YORK – The General Retrieval System for managers (GRS), a new product that enables the executive to easily extract information from the computer in any form he wants without a programmer, has been made available by R.C. Auletta and Co.

After a year of operation and installations, including B.F. Goodrich, Owens-Illinois, Manufacturer's Hanover Trust, and Corn Products, an expanded version of GRS has been released.

According to Auletta, it will offer:

- Full calculation capability (it can now add, subtract, multiply, and divide).
- The ability to perform multiple searches with one pass of the data base.
- The automatic creation of up to six levels of totals for each GRS report.

GRS, written entirely in Cobol, is designed to be a simple, practical, and inexpensive solution for those organizations wishing to bridge the programmer gap, an Auletta spokesman said. It allows company presidents, managers' secretaries, and others with a need for information from the computer to request and receive their own reports in English, he said. Costly programming and systems time is saved and reports are received when they are needed, without having to wait while complex programs are written, he said.

The price of the new, redesigned system is $4,000 for complete installation and user-education for one data base. The price is $10,000 with the addition of a GRS generator program providing the ability to quickly and easily adapt GRS to additional files, he said.

GRS can be easily adapted to most computers being sold today, he said.

Auletta has offices at 59 E. 54th St. here.

Special Language Written for Actuaries

LONDON – A new tool, for insurance companies called Rival which, with its supporting programs, is claimed to be a powerful and flexible computerized system for the valuation (calculation of reserves) of life policies, has been announced by International Computers Ltd.

Rival (rapid insurance valuation language) is a high-level programming language specially designed to allow actuaries to perform valuations on ICL's 1900 Series computers with a minimum of systems and programming assistance. Valuation of policies to establish reserves and hence profitability is central to the operation of a life office.

The new language enables the actuary to write his formulas in a form close to the mathematical notation he uses every day, and requires no intimate knowledge of the computer, ICL said. All the standard actuarial functions are available and provision has been made for nonstandard functions to be incorporated.

Using Rival, each policy can be valued on several bases concurrently and the bases themselves are infinitely variable, ICL said, and the language can cope with both individual policy valuation and grouped policies.

Previous methods of valuation have tended to be laborious, with the time scale measured in weeks or even months. The time scale on which Rival operates can be measured in hours.

Rival has already proved highly successful during extensive field testing with a number of leading life offices, the company said.

The Life Association of Scotland is one of the first four users. J.C. Black, data processing officer of the association, said, "So far as I can ascertain, Rival is far in advance of any comparable facility for the life assurance industry." The language will process both decimal and sterling currencies, ICL said.

Rival requires only an 8K store, but is designed to take full advantage automatically of the core size and power of whatever processor is available, ICL said. It is currently available in the magnetic tape version, and the disk version will be released shortly, ICL said.

The company's offices in the U.S. are located on Madison Ave. in N.Y.C.

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New Service for Banks

Processing of Installment Loans

DAYTON, Ohio – The National Cash Register Co. has further expanded the services offered by its data processing centers with the introduction of a new installment loan accounting system.

The system accepts data from banks or other financial institutions by any of four media: punched paper tape, punched cards, magnetic tape prepared by NCR data encoders, or MICR (magnetic ink character recognition) equipment.

Input data may be prepared by the subscribing institution or at the processing center from media sent in by the subscriber.

Mag Tape to Microfilm Service Presently Ready

WILMINGTON, Mass. – A new service which converts computer-generated magnetic tape directly into 16mm microfilm records has been announced by Avco Computer Services.

Computer micromation consists of a high-speed printer/film processor which operates at computer tape speeds up to 7,000 lines a minute, and delivers printed microfilm at a throughput rate of 120 pages a minute.

Computer micromation is available to EDP users with their own installations and to current ACS customers, the company claims. Special courier service to and from the Wilmington installation is provided by ACS.

Services

Keyboard Input Service Established in New York

NEW YORK – Magnetic Input Services Corp. has announced a new service for data processing users.

This new input service at 357 W. 52nd St. will provide keyboarding, proof-reading, computer updating, and correction data from source documents through to verified computer-compatible magnetic tape.

Magnetic Input Services uses the new Keymatic Series 1000 Encoders.

The ability to inscribe variable length records directly onto computer-compatible magnetic tape, and the capability to encode any of the 256 EBCDIC codes from a single key depression makes the Keymatic Encoders the ideal device for some applications that were impractical utilizing conventional input devices, according to the company.

Information Systems Unit For Government Services

HARRISON, N.Y. – Lockheed Aircraft Corp. has opened a new information systems center to be known as the New York Branch Operation of Lockheed Information Systems.

The facility will be a regional hub of the company's programs in health care, education, and government, according to the company.

Robert Donati has been appointed manager at the 600 Mamaroneck Ave. facility.

The New York branch is to be part of nationwide network of information systems service organizations, according to Donati.

An Atlantic branch was opened in Silver Spring, Md., outside Washington, D.C., last year.

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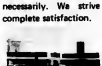
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Computer Analyzes Stock Trend by Statistics Only

ALBUQUERQUE, N.M. – Albuquerque is a long way from the Wall Street scene and the image of a physicist bears little resemblance to that of an investment counselor.

But a group of scientists at the Dikewood Corp. here began exploring the capabilities of their scientifically oriented IBM computer, and have developed a successful business and a new company by applying hard scientific principles to the ups and downs of Wall Street.

"The IBM system analyzes the historical prices of NYSE stocks, computes various slopes for each, sorts and arranges a relative ranking by performance. The computer then applies the rules developed and automatically prints a weekly list of what stocks to buy, sell, of hold – and in what order," according to Dr. Sheldon H. Dike, president.

Dr. Dike formed Edde Securities Corp. to handle the weekly Dikewood Stock Report. The results of Edde's computer analyses were so successful that the firm formed a mutual fund.

To assess the value of the computer analyses, Edde traces a hypothetical portfolio which is managed strictly according to the weekly reports.

In 1967, the sample portfolio increased in value by 87%. The 1968 portfolio grew 42%, Dr. Dike said.

"We constantly examine our strategy and try to update our techniques. We're always looking for something new."

Each Friday, closing weekly price changes in common stocks listed on the NYSE are received by Teletype and fed into the Model 44. The computer follows about 1,200 issues a week.

"Part of our strategy involves looking at both the best and worst stocks. The computer can sort them in several different ways."

Clients are cautioned that "no analysis technique can guarantee profits," and Edde applies a basic and simple rule in financial advising: If a stock is going up, buy some; if it goes up some more, buy some more; if it goes down, sell it.

Edde doesn't concern itself at all with market growth, industry trends, or new developments, and doesn't even care what a company's product is.

"We make no claim to understanding the stock market," Dr. Dike said. "Basically, we believe that everything we need to know about a stock is reflected in its price and past performance."

Collins Will Vigorously Oppose Electronic Data's Tender Offer

DALLAS – The Collins Radio Board of Directors "has unanimously decided to oppose vigorously the exchange offer proposed by Electronic Data Systems."

President Arthur A. Collins, in a letter to stockholders, called the proposal "hostile to the interests of the company" and indicated that Collins "has been evaluating a number of other transactions, which if consummated, might have an important effect on the current situation."

Latest Development

A short release by Collins Radio on April 8 indicated that Honeywell and Collins are holding discussions on a potential merger.

A joint statement by James A. Binger, chairman of Honeywell, and President Collins said that the terms of the transaction are not yet finalized

Collins cited the following reasons for opposing the EDS tender offer: EDS had a high price-earnings ratio of 300; 91% of EDS's stock was owned by nine officers and directors; and Collins had 1968 sales 55 times greater than EDS's.

Collins also said that as set forth in the EDS registration statement, "Collins shareholders accepting the offer would suffer very large dilution in earnings per share" so that if 51% of the Collins shareholders exchanged their shares, the earnings represented by each Collins share exchanged for 1.5 electronic shares would be reduced from $4.44 to 93 cents.

The EDS proposal, according to Collins, could raise "significant questions under the federal antitrust laws, could have a serious adverse effect on the relations between the company and its major customers, including the United States government, and could jeopardize the personnel relationships within the company which are vital to its continued technical achievements."

Collins did indicate, in conclusion, that the company realizes "the full potential of our communications-oriented data systems as a major sector of business."

UCC Has Acquired Datel Through Stock Exchange

DALLAS – University Computing Co. has acquired Datel Corp. through an exchange of stock, on the basis of six shares of Datel for each share of UCC.

The number of shares involved was not disclosed. Datel was a privately held company. UCC is traded over the counter.

Sam Wyly, president and chief executive officer of UCC, stated that Datel will continue to operate under its present management as a wholly owned subsidiary of UCC.

Wyly presented three primary reasons for acquiring Datel, producer of computer peripheral equipment.

First, Wyly believes, Datel provides additional terminal capability to the UCC computer network.

Second, increased management resources are made available to UCC.

Third, Datel is expected to contribute substantial earnings to UCC's over-all profitability (Datel sales are currently running at a rate of $5 million, more than twice the rate projected by Datel management only six months ago, according to Wyly.

Management Assistance Inc. Gets $7.7 Million Financing

NEW YORK – Management Assistance Inc., a diversified data processing products and services organization, has reported that it has sold to certain institutional investors, for a total purchase price of $7.7 million, 770,000 shares of common stock, and warrants expiring Jan. 15, 1974, to purchase an additional 770,000 shares.

The warrants are exercisable at $13 per share on or before July 31, 1970, and thereafter until expiration at $17 per share.

Corporation S Sold Out

DALLAS – Stockholders of Recognition Equipment Inc., an optical-scanning equipment maker, have fully subscribed for rights to buy 224,889 common shares of a subsidiary known as Corporation S, according to the company.

Holders of 22 Recognition shares could buy one of the unit's shares at $10; and the offering, with an indicated value of $2,248,890, reduced Recognition's holdings to 49% of the 1,310,142 Corporation S shares currently outstanding.

Comtel Gets $2 Million Secured Loan Commitment

CHICAGO – Comtel Leasing Inc. has obtained a $2 million secured loan commitment from Continental Illinois National Bank and Trust Co.

Located in Southfield, Mich., Comtel leases closed-circuit television systems, hospital television and communications equipment, and computer systems.

Firm's Growth Tied to Industry Advance

SAN FRANCISCO – Computing and Software, Inc.'s growth in earnings per share in 1969 will exceed the 50% rate recorded last year, Dr. Norman E. Friedmann, president of the software-oriented corporation, recently told security analysts.

"Based on our first quarter actuals and a recent reforecast of this year's operations, including high-probability acquisitions, we are confident that such a growth record will be achieved in 1969," Dr. Friedman disclosed at a luncheon hosted by the San Francisco Society of Security Analysts at the St. Francis Hotel.

"We anticipate a major expansion of our information services to use computer-based techniques to attack key marketing problems for industry and business leaders throughout the country," indicated Dr. Friedmann. "In addition, we plan to establish additional commercial computer centers in an expanding number of major metropolitan cities throughout the United States."

Industry Prediction

In his address, Dr. Friedmann maintained that the software industry will continue to develop at a relatively high rate, perhaps at a minimum of 25% per year deep into the next decade.

Price competition will slowly grow and will bring margin pressure on companies not involved in providing relatively unique products and services. However, there will be a favorable outlook for excellent profitability in high-proprietary content work, he continued.

"Emphasis is rapidly shifting away from technological progress for its own sake to a blend between technological competence and professionalism in the employment of sound marketing techniques," he indicated.

"As witnessed in virtually every maturing industry, marketing and professional management will become the key factors of successful companies in this diversified field."

Dr. Friedmann believes a relatively small number of "sleeping giants" will emerge in the 1970's, each with annual revenues exceeding $100 million.

In his speech, he traced the successful growth of Computing and Software from a $6 million corporation to one which last year approached $34 million. He also disclosed that net income rose from $.2 million to $1.9 million during the identical period. Earnings per share advanced from $.15 in 1965 to $.68 in 1968 on a post-split basis.

$2.5 Million to Data Trends

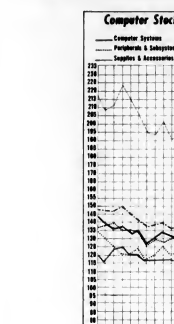
MOUNTAIN LAKES, N.J. – Data Trends has obtained $2.5 million for working capital through the private sale of 100,000 common shares, at $25 each, to seven institutional investors, according to a company spokesman.

Granite Seeks $15 Million For Foreign Investment

GARDEN CITY, N.Y. – Granite Equipment Leasing Corp. said it is offering in the foreign public market $15 million Eurodollars of its 6-1/4%, 15-year convertible bonds through underwriters led by Banca Commerciale Italiana, E.F. Hutton & Co., Keyser Ullmann Ltd., and the Dresdner Bank A. G.

The offering will be made by Granite Overseas Corp. N. V., a subsidiary.

Proceeds will be used for operations outside the United States.



Software Group Again In Thick of Price Action

By A.B. Williams
CW Staff Writer

Computer stock prices largely reflected the overall market during the week ended April 4. The software sector had most of the major percentage price swings, accounting for all but one of the changes of 10% or more.

While the Dow Jones industrial average lost 8.18 (0.87%) to 927.30, *Computerworld*'s Composite Index moved up 0.12% to 129.30. The gain can be attributed, however, to adjusting base prices to reflect previous splits and stock dividends. Other major stock indexes were down.

By comparison, the higher-priced members of the Systems sector, where the Index included only one gainer, showed an aggregate average loss of 2.34 points, or less than 2%.

The generally less volatile Supplies group posted changes ranging from 1-1/2 down, with the exception of the higher-priced two issues. 3M declined 3-1/4 (3.12%) to 101, while Memorex lost 2-1/2 (3.2%) to 75-5/8.

Odd-Lot Action

Odd-letters in the overall market were on the sell side, by a margin of more than 10%.

This was true in listed computer stocks, with the exception of two colossuses, IBM and RCA.

IBM's stock has been heavily on the buy side in odd-lot trading during the last three weeks, while the price has moved in the 295-316 range. It appears a number of people believe that IBM is cheap at 300.

Institutional Holdings

While the war on speculation continues apace, with many brokerage firms backing up Exchange desires by limiting initial purchases, the American Stock Exchange reports that about half the issues traded on the Amex are held by institutional investors.

Included in this select list (with number of institutions holding) are Mohawk Data Sciences (44), Digital Equipment Corp. (28), CalComp (15), Planning Research (15), Leasco Data (25), Randolph Computer (15), DPF&G (14), and Levin-Townsend Computer (12). These companies now join such long-time favorites as IBM, Honeywell, GE, RCA, and Xerox (to name but a few) in the portfolios of institutions.

Industry Survey

The computer industry continued to break records in 1968 – this was fully expected. What came as something of a surprise was the size of the increase – some 22% over 1967.

According to *EDP Industry Report*, total shipments were up 22% over the previous year, with large computers showing the way.

Some of the large computers were finally shipped. The large computer lines should start becoming profitable sooner than smaller processors which are most often leased, and written-off over four years. A number of trends that were also spotted by *EDP Industry Report* included:

- Third-party lessors purchasing more than $1 billion from IBM and others.
- Minicomputers getting a toehold.
- Time sharing has begun to mushroom.
- IBM announced they would keep competition on its toes, with a June, 1969 announcement of possible separate pricing.

Software Market

Software competition was examined by *Barron's* on April 7. The article looks at the field from a number of angles, but one quote is outstanding: "Competition, already keen, threatens to become chaotic."

COMPUTER STOCKS: TRADING SUMMARY

WEEK ENDED APRIL 4, 1969

PERIPHERALS & SUBSYSTEMS

		BASE PRICE EXCH	1968 RANGE	CLOSING PRICE		WEEK NET CHANGE	WEEK $ CHANGE	%CHANGE FROM BASE
N	56	3/8	91- 50	74 1/2	ADDRESSOGRAPH-MULT	- 1/8	-.17	27.60
A	11		50- 39	39 1/2	ALPHANUMERIC	- 1/2	-1.14	10.14
N	89		40- 26	37 3/4	AMPEX CORP	- 3/4	-1.95	30.17
N	17	1/4	27- 14	17	BOLT BERANEK & NEW	- 1/4	-1.45	1.44
N	13	1/2	21- 11	12 7/8	BUNKER-RAMO	- 1/2	-3.74	-4.63
N	30	1/8	58- 26	30 5/8	CALCOMP	- 1/8	-.40	2.04
O	24	1/2	31- 26	29 1/2	CONVERTRONICS	- 1/2	-1.67	20.41
O	12		15- 10	12 1/2	COMPUTER EQUIPMENT	- 1/2	-3.87	4.82
A	15	1/4	28- 17	18 3/8	DATA PRODUCTS CORP	- 1/8	-.68	20.49
A	15	1/4	27- 16	17 3/4	DIGITRONICS	- 1/4	-1.39	16.34
O	39		67- 28	56 1/2	ELECTRON MEMORIES	- 1/2	-.88	44.87
O	18		32- 11	18 3/8	EVANS-TEK	- 1/4	-1.34	20.71
O	28	5/8	58- 25	35 1/4	FARRINGTON MFG	- 3/4	-2.08	26.01
A	58	5/8	87- 18	16 1/2	INFORMATION DIS	----	----	71.64
A	16	7/8	58- 14	20 3/8	MILGO ELECTRONICS	- 1 1/4	-5.89	30.99
N	87	3/4	111- 39	74 1/4	MOHAWK DATA SCI	-	-1.34	179.38
O	74		93- 18	59	OPTICAL SCANNING	- 6	-9.23	98.27
A	18		48- 22	26	PHOTON INC	- 1/4	-.92	44.44
A	25	5/8	38- 28	38 1/4	POTTER INSTRUMENT	- 1/8	-.41	18.85
O	46	1/4	84- 5	47	PRECISION EQUIP	- 1/4	-.29	5.48
A	16		29- 14	19 1/8	RIXON ELECTRONICS	- 3/8	-1.92	19.53
O	44	1/8	63- 40	45 3/8	SANDERS ASSOCIATES	- 3/8	-.82	1.40
O	47	1/8	155- 38	47	SCAN DATA	----	----	40.55
O	47	1/8	51- 22	25 1/2	TALLY CORP	- 1/2	-1.92	-37.84
N	242	1/4	308-229	251 3/4	XEROX CORP	- 4 3/4	-1.85	3.97

SOFTWARE & EDP SERVICES

		BASE PRICE EXCH	1968 RANGE	CLOSING PRICE		WEEK NET CHANGE	WEEK $ CHANGE	%CHANGE FROM BASE
O	7	3/4	24- 7	18	ADVANCED COMP TECH	- 1	-9.09	33.33
O	17	3/4	36- 14	35	*APPLIED DATA RES	+ 2	6.96	97.18
A	15	1/2	16- 8	11	ARIES	- 1	-8.33	-29.83
A	47		77- 42	71 3/4	AUTOMATIC DATA PRC	+ 1	1.41	52.66
O	4		12- 10	10 1/2	AUTO SCIENCES	- 1/4	-2.33	162.50
O	4		23- 3	13	*BRANDON APPL SYS	- 3/4	-5.45	188.89
A	22	7/8	40- 16	16 1/2	COMPUTER APPL	- 1/2	-2.94	-25.71
O	5	7/8	16- 5	13 1/2	COMPUTER ENVIRON	- 1 1/2	-10.00	170.00
O	38	7/8	44- 24	38	COMPUTER NETWORK	- 5	-11.63	28.67
N	48		66- 31	48 1/4	*COMPUTER SCIENCES	- 5	-4.74	50.60
O	39		57- 33	34 1/2	*COMPUTER USAGE	----	----	11.54
A	18	1/4	46- 21	47 1/2	*COMPUTING 1 SOFT	- 7/8	1.88	168.38
O	10	1/2	28- 5	16 1/2	DATAMATION SERVICE	- 1	-5.71	57.89
O	14	1/2	22- 10	14	DATATAB	- 1 1/2	-10.88	-3.45
O	12	1/2	19- 9	11	*DIGITRON	- 1/2	-4.38	-13.43
A	58	3/8	51- 25	28 1/4	ELECT COMP PROG	- 1/8	-.44	-76.38
O	17	3/8	54- 16	23	*ENSIGN-BICKF	- 1	-4.55	27.78
O	21	3/8	28- 4	9	MATRIX CORP.	- 2 1/4	-21.74	-57.14
O	5	5/8	24- 4	18 1/2	MAT COMP ANALYSTS	+ 2	12.08	228.57
A	15	1/2	31- 11	30 1/2	PLANNING RESEARCH	+ 1	3.39	96.77
O	A 13	1/2	20- 8	8	PROGRAMMING & SYS	----	----	-39.40
O	9		15- 6	6	SOFTWARE SYSTEMS	- 1/8	-2.04	-33.33
O	A 29		A 68- 8	21	STRATEGIC SYS	----	----	-27.58
O	28		82- 18	17	TRS COMP CENT INC	- 5 3/4	86.38	-17.81
O	A 19		A 19- 7	8 1/4	UNITED DATA CENTR	- 1 1/4	-13.16	-17.50
O	63		165- 8	95	*UNIVERSITY COMP	- 11	-18.96	51.68
O	A 58		A 38- 12	16	URS SYSTEMS	- 1/2	-3.03	-42.01
O	A 58		A 38- 13	16	U.S. TIME-SHARING	- 2 1/2	18.50	-46.67

COMPUTER SYSTEMS

		BASE PRICE EXCH	1968 RANGE	CLOSING PRICE		WEEK NET CHANGE	WEEK $ CHANGE	%CHANGE FROM BASE
N	163	3/8	255-157	248 1/8	*BURROUGHS CORP	+ 1 7/8	-76	51.87
N	67	3/4	101- 48	59 3/4	COLLINS RADIO	- 1/2	-.83	-11.81
N	101	1/2	163-101	137 5/8	*CONTROL DATA CORP	- 2 3/8	-1.70	35.59
A	102		179- 95	168	*DIGITAL EQUIPMENT	- 6	-3.83	56.86
N	41	1/8	57- 18	20 1/8	ELECTRONIC ASSOC	- 5/8	-3.01	5.03
N	87	1/4	100- 80	90 5/8	GENERAL ELECTRIC	- 1 7/8	-2.03	3.58
N	97		91- 59	66 1/4	HEWLETT-PACKARD CO	- 1 5/8	-1.80	43.73
N	93	1/8	139- 89	124 1/4	HONEYWELL INC	- 4 1/4	-3.31	53.40
N	284	1/2	315-203	218 3/4	IBM	- 3 1/4	-1.46	7.71
N	163	7/8	154- 99	102	*NCR	- 3	-2.48	17.45
N	46	7/8	55- 41	45 3/4	RCA	- 2 1/8	-4.44	21.03
O	39	1/8	107- 33	39 7/8	RAYTHEON CO	- 1/8	-.31	1.99
N	58	1/2	71- 51	53	REYNOLDS & REYNOLD	+ 4 1/2	9.23	44.67
N	78	3/4	119- 79	112 5/8	*SCIENTIFIC DATA	- 3 1/2	-3.01	43.69
O	45		61- 41	51	*SPERRY RAND	- 1 1/2	-2.86	13.33
A	20	1/2	39- 26	38	*SYSTEMS ENG. LABS	- 5/8	-2.84	33.33

SUPPLIES & ACCESSORIES

		BASE PRICE EXCH	1968 RANGE	CLOSING PRICE		WEEK NET CHANGE	WEEK $ CHANGE	%CHANGE FROM BASE
O	48	1/2	48- 30	35	*ACME VISIBLE	+ 1	2.94	-27.84
N	8C	1/8	65- 17	10 7/8	ADAMS-MILLIS CORP	+ 1/8	4.86	-7.93
A	13	1/8	24- 12	17 1/2	*ADDRESSOGRAPH FORM	- 1/8	-.70	1.85
O	27		44- 18	19	*ARRY MFG	- 1/2	-2.56	-29.63
O	37		44- 25	38	DATA DOCUMENTS	- 3/4	-1.94	23.01
O	17	1/4	40- 17	40	*DENNIS BUS. FORMS	+ 1	2.56	46.19
N	98		99- 61	75 5/8	*DENNISON	- 1 3/8	-1.78	30.99
N	84	1/8	119- 81	101	*3M COMPANY	- 3 1/4	-3.12	28.66
O	17	1/8	33- 15	31 1/2	*MOORE BUS FORMS	- 1 1/2	-4.55	84.31
N	2C	3/4	43- 18	39 1/4	MASHUN CORP	- 3/4	1.95	38.33
O	25	1/8	37- 26	28	REYNOLDS & REYNOLD	- 5/8	-2.83	11.80
O	34	1/2	35- 24	28 3/4	*STANDARD REGISTER	- 3/4	2.68	-16.67
N	37	3/4	44- 28	29 7/8	*WARCO	- 1/4	-.83	-20.84
A	14	1/4	24- 15	17 1/4	WABASH MAGNETICS	+ 3/8	2.22	21.05
O	C5	3/4	3C- 29	3E	*WALLACE BUS FORMS	- 1 1/4	-3.76	24.27

LEASING COMPANIES

		BASE PRICE EXCH	1968 RANGE	CLOSING PRICE		WEEK NET CHANGE	WEEK $ CHANGE	%CHANGE FROM BASE
O	1C		43- 37	39	BOOTHE COMPUTER	+ 3/4	1.96	116.67
O	1C		2C- 1C	1 1/4	COMPUTER EXCHANGE	+ 1/4	-8.08	108.64
O	23	1/C	34- 8C	24	*COMPUTER LEASING	+ 1/4	1.05	4.35
O	A 13	1/2A	15- 8	14 1/4	CORT COMPUTER	- 3/4	7.89	-35.25
O	18	1/4	27- 16	18	COMPUTER-TRONICS			-0.42
O	55		92- 2E	49 1/8	*DATA PROCESS FIN	- 1 1/8	-3.15	-7.51
O	4E		7C- 4C	48 1/2	DATRONIC RENTAL	- 1 1/2	-3.00	37.06
O	0E		5E- 4E	47 3/4	DEARBORN COMPUTER	+ 4	-7.73	136.75
O	13	1/4	18- 11	13 3/4	DELTA, INC	- 3/4	-5.17	-4.30
O	1		21 1/4	20 3/4	GRANITE EQUIPMENT	- 8	-5.68	66.71
A	3C	3/4	4E- C1	31 5/8	*GREYHOUND COMPUTER	- 5/8	-0.81	-24.78
A	19	5/8	6E- 3E	4E	*LEASCO DATA PROC	- 1 3/4	-4.46	114.61
A	1E	1/8	3E- 1E	3 3/4	LECTRO COMP LEAS	- 1/4	-5.13	55.00
A	0E	1/C	4C- C5	37 1/2	*LEVIN-TOWNSEND CMP	- C 1/8	-3.37	0C.93
O	1C	3/4	1C- 5	8 1/2	*LINC DATA, INC	- 1/4	-4.25	-7.48
O	1C	3/8	7E- 9	1C	*MANAGEMENT ASSIST	- 5/8	-12.89	-3.61
A	41	5/8	141- 83	83 1/4	NATIONAL EQUIPMENT	- 3/4	8.31	-00.18
O	A 13	5/8A	14- 8	8 3/4	MCC LEASING	- 1/4	-0.78	-33.98
A	3E		6A- 3E	31 1/2	*RANDOLPH COMPUTER	- 1 1/2	-1.56	-16.78
O	5		3C- 5	05	SYSTEM CAPITAL	- 8	-7.41	376.19
A	1C	7/8	2E- 9	E4 3/8	U.S. LEASING	- 3/8	-1.58	184.14

New Registrations

TIME-SHARING TERMINALS, INC., 7978 Old Georgetown Rd., Bethesda, Md. 20014, a company which provides computer terminals and related technical support, equipment, and software, on a sale or lease basis, filed to register 350,000 shares of common stock. Proceeds, at $10 per share, will be used to pay the balance of the purchase price of terminals and couplers, repayment of short term loans, for working capital and other corporate purposes. The underwriter is Kluger, Ellis & Mann, 26 Broadway, New York, N.Y.

ALPHA-TECH INC., 91-99 Broadway, Greenlawn, N.Y. 11740, a company engaged in the preparation and sales of training and operating instructions and technical manuals for use with complex electronic and mechanical systems such as digital computers, filed to register 120,000 shares of common stock. Proceeds, at $4 per share, intended for research and development of additional devices to be utilized in its educational and training operations, and the acquisition and/or expansion of manufacturing facilities. The underwriter is Charles Plohn & Co., 200 Park Ave., New York, N.Y. 10017.

DATACRAFT CORP., 776 N.E. 40 Court, Fort Lauderdale, Fla. 33307, a company engaged in the design, manufacture, sale, and service of a line of magnetic core memory systems for computers and other electronic equipment requiring digital storage, filed to register 300,000 shares of common stock. Proceeds, at $10 per share maximum, intended for general corporate purposes, including the development and improvement of existing and new products, expansion of the company's marketing and advertising program, the purchase of testing and capital equipment, leasehold improvements, and working capital. The underwriter is Dempsey-Tegler & Co., Inc., 1000 Locust St., St. Louis, Mo. 63101.

COMPUTER IMAGE CORP., 2162 S. Jason St., Denver, Colo. 80223, a company engaged primarily in research and development relating to an animation and display system utilizing a combination analog and digital computer, filed to register 200,000 shares of common stock. Proceeds, at $12.50 per share maximum, intended for providing working capital, the purchase of fixed assets consisting primarily of professional video cameras, video cameras, and video tape equipment, research and development, working capital, and general corporate purposes. The underwriter is Bender & Co., 828 17th St., Denver, Colo. 80202.

SYSTEMS FOR ADVANCED INFORMATICS, INC., 245 Waterman St., Providence, R.I., a company engaged in offering computer service activities, systems analysis, programming and management consultation, and data preparation operations to users of data processing services, filed to register 150,000 shares of common stock. Proceeds, at $5.50 per share maximum, intended for development and implementation of proprietary programs and systems, the establishment and staffing of additional data processing centers, and additional working capital. The underwriter is R.K. Hickey & Co., 80 Broad St., New York, N.Y.

DISPLAY SCIENCES, INC., 3 Industrial Ave., Upper Saddle River, N.J. 07458, a company engaged in the development, manufacture, marketing, and servicing of large area electronic display systems, filed to register 300,000 shares of common stock. Proceeds, at $3 per share, intended for research and development, expansion of plant facilities, leasehold improvements and additional facilities, advertisement and product promotion, and added to be used for general corporate purposes. The underwriter is Charles Plohn & Co., 200 Park Ave., New York, N.Y.

TELECOMP, INC., 3060 North Federal Highway, Boca Raton, Fla. 33432, a company which provides computer time-sharing and computer batch processing services, filed to register 210,000 shares of common stock. Proceeds, at $5 per share maximum, intended for initial expenses, operating expenses, working capital, and general corporate purposes. The underwriter is Lincoln Securities Corp., 909 Florida Bank Bldg., Jacksonville, Fla.

CONTROL DATA CORP., 8100 34th Ave. South, Minneapolis, Minn., a company engaged in the development, design, manufacture, and international marketing of advanced solid-state high-speed digital computing systems and related peripheral equipment, supplies, and services, filed to register 155,000 shares of common stock. It is proposed to offer the shares in exchange for the outstanding common shares of Computing Devices of Canada Limited, on the basis of one share for each five Computing Devices shares. Greenshields Inc. will head a group of dealers to solicit acceptances of the exchange offer.

DATASCIENCES CORP., 150 W. 52nd St., New York, N.Y. 10019, a company engaged in the development and sale of information systems and the development of a "Program Check Debug Module" as well as the marketing of this product, filed to register 200,000 shares of common stock. Proceeds, at $5 per share, intended for the further development of proprietary software packages and augmenting consulting services operations, implementation of its computer, working capital, and other corporate purposes. The underwriter is Dunhill Securities Corp., 21 West St., New York, N.Y. 10006.

CARCI COMPUTAB SYSTEMS, INC., 55 Plant Ave., Hauppauge, N.Y. 11787, a company engaged in the manufacture and sale of continuous single and multicopy business forms, known as computab forms, for use in the operation of computers, tabulating, and other business machines, and also in manufacturing and selling of multi-copy snap-a-part business forms, filed to register 172,500 shares of common stock. Proceeds, at $5 per share, intended for repayment of indebtedness, to defray the cost of installing two additional printing presses and a bursting form collator, the purchase of inventories of paper and carbon, and general working capital. The underwriter is Sealfon, Meret & Co., 299 Broadway, New York, N.Y. 10006.

ACADEMIC COMPUTER SYSTEMS, INC. 580 Newark Ave., Jersey City, N.J. 07306, a company which operates data processing and computer programing schools, filed to register 250,000 shares of common stock. Proceeds, at $1.50 per share, will be used for the opening of an additional school in Hackensack, N.J., and for working capital. The underwriter is A.J. Carno Co., Inc., 42 Broadway, New York.

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Opel Elected IBM Senior Vice-President, Retains Finance, Planning Responsibility

ARMONK, N.Y. – John R. Opel has been elected a senior vice-president of IBM.

He had been IBM vice-president, finance and planning, and he continues to have responsibility for those areas.

J.R. Opel

Opel, who has been an IBM vice-president since 1966, joined the company in 1949 as a sales representative. He became vice-president, marketing, of IBM's Data Processing Div. in 1964, and in 1965 he was named assistant group executive, plans and controls, of IBM's Data Processing Group Staff.

In 1967 he was appointed to the company's Management Committee, and was promoted to his present position in 1968.

Opel is a graduate of Westminster College and the University of Chicago, where he received an M.B.A. degree. He lives with his wife and five children in Chappaqua, N.Y.

Ty-Core Elects Munro Chief Executive Officer

CHELMSFORD, Mass. – The board of directors of Ty-Core, Inc. has elected John R. Munro as president, treasurer, and general manager.

J.R. Munro

Munro, one of the founders of Ty-core, was formerly division manager of Ovitron Corp.'s Com-tronix Div. in Chelmsford.

He has also been associated with Sanders Associates and Sylvania

Munro received his B.S. in Mechanical Engineering and a B.B.A. degree from Northeastern University. He is a member of IEEE, Professional Group Engineering Management, and the American Ordnance Society.

Wittenborn to Specialize As Tracor Computer Chief

AUSTIN, Texas – Dr. A.F. Wittenborn will leave his position as vice-president in charge of Tracor's Sciences and

new people

Systems Group, and will begin devoting the major portion of his time to his position as president of Tracor Computing Corp., according to R.N. Lane, chairman and president of Tracor, Inc.

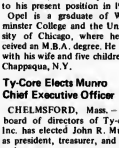
"Tracor Computing Corp. is now functioning as a separate company," Lane said.

Listed in American Men of Science, Dr. Wittenborn was a staff member of Los Alamos Scientific Laboratory, and vice-president of Texas Research Associates, the forerunner of Tracor.

He holds a Ph.D. in physics from the University of Texas, and is a member of Sigma Pi Sigma, American Physical Society, and Acoustical Society of America.

Access Adds Admiral

CINCINNATI, Ohio – Access Corp. has announced the election of Rear Admiral John K. Leydon USN (Ret.) as a member of the firm's board of directors.



J.K. Leydon

Admiral Leydon is a special partner in the nationwide investment firm of Paine, Webber, Jackson & Curtis and is associated with the underwriting division.

Adm. Leydon was Chief of Naval Research from 1964 until he retired in June, 1967, earning the Legion of Merit for his outstanding service in that position.

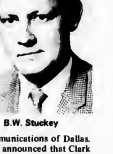
A 1938 graduate of the U.S. Naval Academy, he was a naval aviator and weapons engineering officer early in his career, and devoted most of his naval service to research and development.

In addition to his post-graduate studies at Annapolis and the Harvard School of Business Administration, he also received an M.S. degree from the California Institute of Technology.

Adm. Leydon is a member of the board of directors of Radiation Research Corp. and Laser Diode Laboratories, Inc.

Stuckey Made Manager

DALLAS, – Byron W. Stuckey has been elected senior vice-president and general manager of the Reach Corp., a wholly owned subsidiary of National



B.W. Stuckey

Data Communications of Dallas. Reach also announced that Clark Pritchard has been elected vice-president and assistant general manager of Reach.

Computers: What's their future?

The special Review and Forecast issue of *EDP Industry Report*, just published, contains a valuable analysis of the explosive computer industry at a time when there are significant transitions occurring in the EDP market.

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Acquisitions

PHILADELPHIA, Pa. – Management Data Corp., a consulting firm, and Systems Associates, Inc. have announced that an agreement in principle had been reached for the acquisition by Management Data of Systems Associates for an undisclosed amount of Management Data common stock.

SAI is a privately held computer software and consulting company headquartered in Reading, Pa., with regional offices in Washington, D.C. and Dallas.

ATLANTA, Ga. – Management Science America, Inc., an international management consulting and computer software firm, has acquired Data Conversion Co. of Houston.

Data Conversion specializes in preparing source documents into punched cards or magnetic tape for subsequent processing by a computer.

DALLAS – Affiliated Computer Systems, a software and computer service firm, has agreed in principle to purchase A.R.M., Inc. from the First National Securities Co. in Dallas.

A.R.M., Inc founded in 1960, provides computer-based data services to doctors, clinics, and clinical laboratories in Texas, Oklahoma, Ohio, Kentucky, and New York.

PALO ALTO, Calif. – Computer Time-Sharing Corp. has reached an agreement in principle to acquire the Northwestern School of Business in Lynwood, Wash.

The acquisition will involve the transfer of an undisclosed amount of CTC common stock.

SAN FRANCISCO – SSI Computer Corp. and Statistics for Management Data Processing Corp. have announced agreement in principle to combine their respective companies through the formation of a new company on the basis of one share of the new company's common stock for each share of SSI Computer common stock and 1.5 shares for each share of Statistics for Management common stock.

NEW YORK – Creative Services, Inc., has acquired 80% interest in a new company, Computer Ventures, Inc.

The new unit initially will be active in the marketing of computer hardware and software services and in the international recruitment of computer personnel.

Creative Services, Inc., a recently organized company, plans to develop and acquire companies operating in the consumer and corporate service markets.

HOUSTON – Sterling Computer Systems, Inc. has entered into an agreement in principle to acquire Computer Systems Services, Inc., Los Angeles.

Under terms of the agreement, Sterling Computer will acquire all of the assets of Computer Systems for an undisclosed amount of common stock.

SAN DIEGO, Calif. – Cubic Corp., a producer of industrial and military electronic systems, announced it has agreed to acquire United States Elevator Corp. and United States Elevator Mfg. Corp. for an undisclosed amount of common stock.

HOUSTON – Shareholders of Com-Share Southern, Inc. have approved a proposal to merge the company into a recently organized, and wholly owned subsidiary, Computer Complex, Inc.

HARTFORD, Conn. – The Gerber Scientific Instrument Co. of South Windsor, Conn., announced it has acquired a 90% interest in Applied Programming Technology Corp. of Sudbury, Mass.

Applied Technology, formed last year, specializes in computer software.

WASHINGTON, D.C. – Qatron Corp., based in Rockville, Md., has completed the acquisition of Ensco Distributing Corp. and Engineering Services Co., both of St. Louis, Mo., for approximately $400,000 worth of Qatron stock.

Qatron is a diversified company with divisions in computer programming and electronics.

LOS ANGELES – U.S. Systems & Software, Inc. has agreed to acquire the capital stock of Systems Exploration, Inc. of San Diego through a stock exchange.

U.S. Systems & Software is engaged in scientific and commercial computer systems design, programming and data processing, computerized preparation of technical documents, and the design and development of computer peripheral equipment.

Systems Exploration performs operations analysis, communications analysis, and computer programming.

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Earnings Reports

STRUTHERS WELLS CORP.
Year Ended Nov. 30

	1968	1967
Revenue	$27,598,939	$31,621,652
Earnings (loss)	(2,453,531)	93,295

SYSTEMS ENG. LABORATORIES
36 Weeks Ended March 7

	1969	1968
Revenue	$11,141,000	$8,244,000
Earnings	912,000	688,000
Shr Erng	.44	.35

DATA SYSTEMS ANALYSIS, INC.
Year Ended Dec. 31

	1968	1967
Revenue	$1,612,957	$1,105,428
Earnings	38,130	80,657
Shr Erng	.06	.15

PROGRAMS AND ANALYSIS, INC.
6 Months Ended Nov. 30

	1968	a1967
Revenue	$392,401	
Earnings	41,146	
Shr Erng	.04	

a—Report represents first six months of operations.

ELECTRONIC COMP. PROG. INST.
Year Ended Dec. 31

	1968	1967
Revenue	$3,703,865	$3,961,161
Earnings	389,487	597,611
Shr Erng	.51	.78

SSI COMPUTER CORP.
Year Ended Dec. 31

	1968	a1967
Revenue	$7,221,904	
Earnings	335,934	
Shr Erng	.17	

a—Company formed in Dec. 1967.

ENNIS BUSINESS FORMS
Year Ended Feb. 28

	1969	a1968
Revenue	$30,641,423	$26,183,920
Earnings	1,903,206	1,757,339
Shr Erng	1.66	1.57

a—Restated to reflect results of company acquisitions in fiscal 1969, on a pooling-of-interests basis.

DATAMATION SERVICES, INC
Year Ended Dec. 31

	1968	1967
Revenue	$5,613,937	$4,349,646
Earnings	328,895	194,406
Shr Erng	.30	.19

UNIVERSITY COMPUTING CO.
Year Ended Dec. 31

	a1968	1967
Revenue	$57,000,000	$16,625,000
Earnings	4,485,000	2,537,000
Shr Erng	1.55	.68

a—Includes results of companies acquired in 1968.

DATA MANAGEMENT, INC.
6 Months Ended Feb. 28

	1969	1968
Revenue	$217,264	$165,559
Earnings	35,537	17,175

DATA PROCESS. FIN. & GEN'L
9 Months Ended Feb. 28

	1969	1968
Revenue	$28,986,504	$13,596,334
Earnings	6,229,857	2,557,368
aShr Erng	1.81	.86

a—Based on conversion of 5-3/4% subordinated convertible debentures, and adjusted for 100% stock dividend in Oct. 1968.

CUBIC CORP.
Year Ended Dec. 31

	1968	1967
Revenue	$28,986,574	$13,596,334
Earnings	1,502,283	1,144,574
Shr Erng	.79	.63

Control Data Acquires Punch Card Producer

MINNEAPOLIS, Minn. – Control Data Corp. has acquired the business of American Business Systems, Inc., a Philadelphia-based producer of business forms and data processing cards, in exchange for 37,748 shares of the common stock of Control Data Corp.

The shares of Control Data stock will be distributed pro rata to the shareholders of American Business Systems in liquidation of that corporation.

Instructions for surrender of American Business System stock in exchange for the Control Data stock will be mailed to the shareholders of ABS.

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1. **SJCC Preview Issue** — mailed May 7th (one week before the show opens) 5-6000 issues distributed by Computerworld to show attendees — May 14th
   - (a) Issue date is May 14
   - (b) Color closing — April 18 (Space reservations & mechanicals)
   - (c) Pub. set closing — April 25 (Space reservations & copy)
   - (d) Black and white closing — April 28 (Space reservations and mechanicals)
2. **SJCC Show Issue** — mailed May 15th 5-6000 issues distributed by Computerworld to show attendees — May 15th
   - (a) Issue date is May 21
   - (b) Color closing — April 25th (Space reservations & mechanicals)
   - (c) Pub. set closing — May 2
   - (d) Black and white closing — May 5 (Space reservations & mechanicals)

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These closing dates are in effect only for these SJCC issues . . . before and after, it's Business As Usual . . .,Friday closing for the next Wednesday's issue. We're closing earlier to serve you better. SJCC is important to you, we want to give your ad the best possible service. AND THINK ABOUT THIS . . . FOR THE MONTHLIES, SJCC closed last week. ONLY in COMPUTERWORLD do you have the chance to improve your product ad — up to the end of April. That's why we say . . . the only thing faster than the fast-moving Computer Industry is COMPUTERWORLD . . .

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Orders and Installations

Mervyn's Department Stores, San Lorenzo, Calif., has ordered an NCR Century 100 computer for use in processing data captured by NCR 5 sales registers.

The Yasuda Trust and Banking Co. of Tokyo has ordered a $1.4 million Univac 494 System for its headquarters to be used to process savings accounts, loans, and trust and administration business. Yasuda plans to establish an on-line, real-time banking system covering all of its 36 branches throughout Japan.

Laclede Steele Co., St. Louis, Mo., has ordered a Burroughs B3500 third-generation computer system for reinforcing steel order entry system, maintenance and stores inventory control, in conjunction with the B3500, and purchased scrap analysis, reinforcing steel estimating for structures, sales analysis, accounts payable, pensions, and salaried payroll.

The U.S. House of Representatives, Washington, D.C., has ordered an NCR Century 100 computer for use in preparation of the staff payroll. An additional application will include printing mailing labels.

The First Western Bank and Trust Co., with main offices in Los Angeles, has ordered two Burroughs B3500 computers to integrate the bank's data processing functions into a total information system.

The Pillsbury Co., Minneapolis, Minn., has installed a Control Data 915 Optical Page Reader-computer system to process sales activity reports for about 500 salesmen at its headquarters.

The Oklahoma City Computer Center of Academy Computing Corp., Oklahoma City, has ordered a GE-430 time-sharing system. It will be the first GE-430 to be installed in the U.S.

The Oklahoma Gas and Electric Co. has ordered a GE-415 from General Electric Co. to be used to prepare electric bills and on-line to answer inquiries from customers in the Oklahoma City area.

Information and Computing Centers Corp., Dallas, has installed a Control Data 6600 computer at its Permian Information & Computing Center div., Midland, Texas.

McDonnell Automation Co., St. Louis, Mo., has installed an IBM 360 65/75 for processing data transmitted to it from more than 36 smaller computers and terminals throughout the country.

Dutch State Mines, Amsterdam, The Netherlands, has ordered a Univac 1108 computer valued at $2.6 million for use in processing business and scientific applications.

The University of Kansas has installed a GE-635 information system for education, administration, and research at the university.

The First Federal Savings and Loan Association, Milwaukee, Wis., has ordered an NCR Century 200, which will provide information on all of a customer's accounts.

ACM & Its Dollars — Part 4

What Should the ACM Do Now?

By Alan Taylor

The present financial crisis in ACM is of course receiving attention from the executive committee and the council. But its existence raises questions as to what the ACM should do in the future.

Perhaps the most incisive comment on this matter was given by Dr. Harbert Grosch during the emergency meeting of the ACM Council in February.

"We appear to be going in the wrong direction," he said. "What we need is more professionalism rather than less."

In this he hit right at the center of the ACM problem. The society is admittedly a society of professionals, but they are computer professionals and not professionals at running professional societies.

ACM No Longer a Small Society

There is nothing wrong with running a society using amateur talent and management, but in general this is successful only when the activities of the society remain very close to the membership. This used to be the case with the ACM.

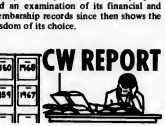
This is no longer so. ACM has become a business where the role of the member subscription has been steadily reduced, percentagewise. And a business needs professional operations to remain profitable.

ACM Business Not Profitable

In fact ACM has not been running a profitable business. For every dollar taken in, the society has paid out approximately $1.20. Often the loss has been hidden in overheads, so even the society itself has not been fully aware of what was being paid out. A typical example is the professional development program, which appeared to be in the black when it was, in fact, well in the red.

British Computer Society is an Example

If ACM wishes to continue these activities, then it should obtain professional management for them. This is the action that the British Computer Society took three years ago when it looked for a new secretary. It looked for and obtained a man who was a professional learned society secretary (there are such people), and an examination of its financial and membership records since then shows the wisdom of its choice.



Financial Strength Also Needed

In the financial area ACM also should look for professional systems. The recent crisis has shown that the present financial safeguards and records are inadequate from a management point of view. They neither communicated the serious problem properly nor did they identify exactly where the problems lay, evan after the problems had occurred.

Rules Must Be Enforced

Another area that requires attention is the problem of safeguarding the enforcement of the various rules. This is always hard in voluntary societies. Everyone knows that the people are dedicated and give their time freely, so it is unpleasant to stand up and say that they have not done the job they were supposed to do.

Auditing Situation

Part of the mystery of the ACM auditing situation — why the same auditor was chosen year after year — was cleared up last week when it was learned that successive presidents of the ACM had consistently chosen the same noncouncil ACM member to select the auditor.

While it still is unclear why the same member was chosen each time, it is not surprising that the member always selected the same auditor.

In a number of cases it appears that the ACM rules have been disregarded. Clearly some way of seeing that the rules are obeyed should be provided without having to rely on people to stand up and make what appear to be personal attacks.

Audit Requirement Could Be Strengthened

One possible way of doing this would be to look more carefully at the definition of the audit requirement.

As currently set up, the audit does not have to be certified. So the auditor does not have to examine the budgets, bylaws, etc., or determine whether, in his opinion, ACM expenditures have been properly handled.

This very simple point, a certified audit, may well handle the problems of rule enforcement.

As for the past, we feel that there should be an investigation. Any unauthorized expenditure should presumably be found and examined and the appropriate decisions made. The budget should be passed and published in accordance with the constitution, and provision should be made in changes to the constitution so that any member can insure that the rules are being obeyed. In addition, new constitutional provisions relating income to expenditures should be enacted.

Three Needs Summarized

These then are the three major characteristics of the suggested conduct for the new ACM. One, provide professional help who are professionals at managing the jobs that the society wants them to manage, not computer professionals only; two, provide adequate mechanisms whereby members can insure that the rules are being obeyed by the council and by the executive committee; and, three, provide new rules that effectively relate income to expenditure (currently expenditure is controlled — but not income).

With these, there is every reason to believe that ACM will go on to greater strengths and may fulfill its early promises. Without them, then, as Bob Bemer put it in a recent letter to CW, the question will remain: is ACM a dying society?

Correction

In "ACM & Its Dollars — Part 3" last week, it was stated that ACM's share of the profits from the joint computer conferences and other Afips activities came out to about $6 per month. The statement should have read that the share was about $6 per ACM member.

Contracts

NEWPORT BEACH, Calif. — Mauchly-Wood Systems Corp., a subsidiary of Scientific Resources Corp., Philadelphia, has been awarded a contract by Marshall and Stevens, Inc., Los Angeles, for the design and implamantation of a computarized appraisal system.

WASHINGTON, D.C. — Delta Data Systems has been selected as a subcontractor to Moseler Information Systems Division of Moseler Safa Co. Delta will assist Moseler in defining the Army Materiel Command's requirements for complete microfilming and data information systems in implemanting technical data centers.

CULVER CITY, Calif. — Ampex Corp. has received a contract for approximately $1.2 million from Badger Meter Mfg. Co., for Model RG magnetic core memories. The Ampex memories will be linked to PDP-10 computers by Badger's Systems Div. in Milwsukee, Wis. Both will be incorporated into time-sharing computar systems developed and marketed by Badger Meter.

STAFFORDSHIRE, England — International Computing Services Ltd. has been awarded a contract by the Methodist Ministers' Retirement Fund whereby ICSL will provide a service for the computerized calculation and printing out of quarterly pension payments for retired Methodist ministers and widows throughout the United Kingdom.

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Ruined Computer Replaced in 72 Hou[illegible] 'Professional' Attack Remains Mystery

BOSTON – Boston University's vandalized 360/40 was replaced by IBM in only 72 hours, bringing praise from university officials.

But the destruction of the original machine [CW, April 9], termed a "very professional job" by police, remained a mystery. The vandals broke into the computer room with a torch and then used wirecutters and acid on the computer circuitry.

IBM Responded Quickly

IBM was notified at noon Sunday that the rented machine had been attacked. Within 60 hours, although the company was officially closed Monday for the national day of mourning for President Eisenhower, parts of a 360/40 were flown in from five plants and assembled at the university. By Wednesday morning, the new machine was running.

The communications controller was flown in and set up Wednesday night, and the time-sharing system was operating satisfactorily Thursday morning.

"IBM responded faster than we would have believed possible," said John Alman, director of the computer center. "We are most gratified."

The thrust of the attack has led to speculation that it was aimed at IBM, not the university, Alman said. The files were not damaged. That they were overlooked out of ignorance seems unlikely since the vandals displayed a knowledge of computers in the selection of circuits destroyed.

AT&T Told to Make TWX Tariff Conform With Carterfone Ruling

WASHINGTON, D.C. – It seems, according to recent action taken by the Federal Communications Commission, that all the dust has not yet settled from the famous Carterfone decision which made it legal to use foreign attachments with AT&T's network.

The FCC recently ordered the telephone company to bring its TWX tariffs into line with the Carterfone decision. The tariffs currently have the same restrictions that were ruled unlawful in the telephone case.

AT&T was requested to "take immediate steps to remove the above-mentioned provisions" (sections B.13 and B.15) from the TWX tariff. The FCC said that in order to expedite the situation, it would accept an application for a special tariff revision on one day's notice. The Commission requested that AT&T advise it of the company's intended course of action.

AT&T had no immediate comment when contacted by *Computerworld*.

CDC Will Make 6600s in France

MINNEAPOLIS, Minn. – Control Data Corp. will manufacture its 6600 and 6400 computer systems at the company's European Computer Operations in Ferney-Voltaire, France.

The European Computer Operations manufactures the CDC 3300 computer system and provides related systems support to Control Data customers in Europe.

Control Data also manufactures peripheral equipment at its subsidiary located in Amersfoort, The Netherlands. Peripherals produced there are integrated into systems at Ferney-Voltaire for final test and checkout prior to shipment to customers.

The Ferney-Voltaire installation also will provide systems support to 6000 series customers in Europe. Control Data plans to deliver the first 6600 to be produced at Ferney-Voltaire late in the fourth quarter of 1969.

Clock Designed to Time Programs

HADDONFIELD, N.J. – A device designed to enable real-time programmers to time programs, routines, and subroutines has been developed by Logic Corp.

The company says that the unit will give accurate measurement up to 9.999 seconds in intervals ranging from 10 milliseconds to 1 microsecond.

Five parameters are measured – actual time, longest and shortest periods to date, and number of times preset high and low limits have been crossed.

The unit has an internal quartz clock.

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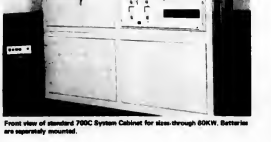

Front view of standard 700C System Cabinet for sizes through 60KW. Batteries are separately mounted.

PROCESSING ERRORS – caused by millisecond power line disturbances. Experience shows that anywhere from 25 to several hundred power line interruptions lasting up to 20 cycles may be expected annually.

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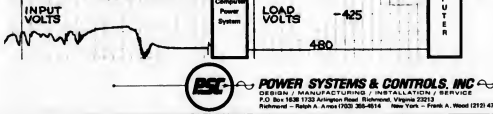

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